GLEANINGS in Bee Culture

HAPPY NEW YEAR

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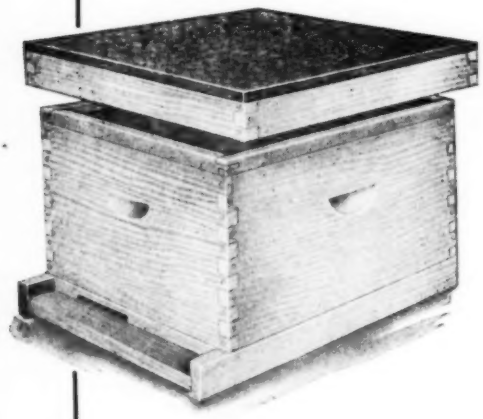
1939

Vol. LXVII Number 1

January, 1939

XUM

Is the Price Right?



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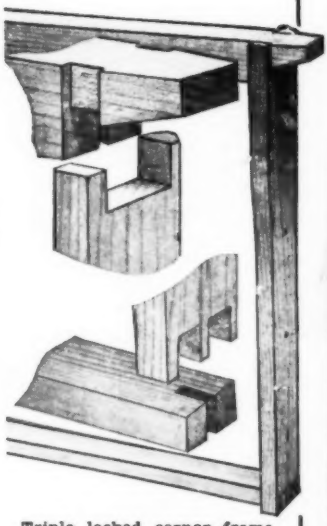

Triple locked corner frame with end-bar for one or two-piece bottom-bars.

New 1939 catalog contains valuable suggestions

The A. I. Root Company

Root QUALITY Bee Supplies

Medina, Ohio

Root QUALITY BEE SUPPLIES

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Gleanings in Bee Culture

Established 1873

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Subscription Rates—United States and Canada, one year, $1.00; two years for $1.50; three years for $2.00. Single copy, 10 cents. Other countries, 25c per year additional for postage. Discontinuance—Subscription stopped on expiration. No subscriber will be run into debt by us for this journal. Change of Address—Give your old address as well as the new and write the name to which the journal has heretofore been addressed. Remittance should be sent by post-office money order, bank draft, express money order or check. Contributions to Gleanings columns solicited; stamps should be enclosed to insure return to author of manuscript if not printed. Advertising Rates—Advertising rates and conditions will be sent on request. Results from advertising in this journal are remarkably satisfactory. Advertisers' Reliability—While the publishers do not guarantee advertisements in this journal, they use utmost diligence to establish in advance the reliability of every advertiser using space in this journal.

Entered as second class mail matter at the Postoffice at Medina, Ohio. Published monthly.

The A. I. Root Company, Publishers, Medina, Ohio

E. R. Root and M. J. Deyell, Editors; M. W. Hobart, Assistant Editor; H. H. Root, Associate Editor; D. C. Babcock, Circulation Manager.

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Root Quality at Syracuse

Send us a list of your 1939 requirements for special quotations, or, if you find it convenient, call at our office and we will be glad to give you the advantage of many years of experience in helping you plan for the proper equipment. WE CAN SAVE YOU MONEY. At Syracuse you get Root goods at Factory prices.

Get the Most from your Beeswax. Have it made into Root's famous foundation, 3-ply for brood and deep extracting frames, frames, single ply medium brood for shallow frames, and thin super for sections. You can send your wax to Syracuse and foundation will be shipped promptly direct from our stock. A saving in Time and Freight.

We will also accept your wax at highest market prices in exchange for bee supplies. Old combs and cappings rendered. Write for complete terms.

Be sure to get your copy of Our 1939 Catalog

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Midland Ave. and Tallman St.
SYRACUSE, N. Y.
SERVES YOU BEST

ROOT SERVICE From CHICAGO

To all we wish a very

Good New Year

Chance may bring some of us good. For most of us good will come through our earnest endeavor and application to tested rules of production. Will you make the most of Nineteen Thirty-nine by knowing better how to produce and sell honey? We advise as the best and a very complete source of information:

"Gleanings in Bee Culture"
(Each month for two years)

"A B C and X Y Z of Bee Culture"
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Two Qualities

Every Western Beekeeper Wants in Foundation

—Stand hauling over rough roads when loaded with Honey and Bees.
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Has What the Beekeeper Wants.
Send for Folder "126 Degrees,"—read Wahl's Statement in Root's Advertisement

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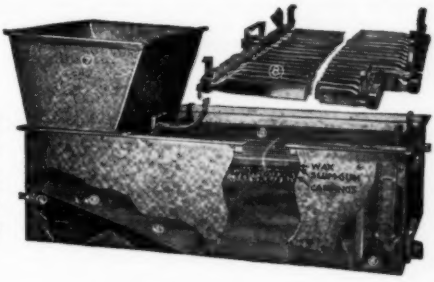
Brand Capping Melter



Warren A. Munro in Ontario writes: "We are very enthusiastic over the Brand Melter and money could not buy the one we have if we could not get another one. The Melter has lots of capacity for two men uncapping as we haven't been able to get the Hopper full of cappings yet. We have been extracting 6000 to 7000 of honey per 9-hour day."

(Senior Size Used)

A. G. Woodman Co. Ontario, Canada, November 12th, 1938
Grand Rapids, Mich.
Dear Sirs:

Your letter of Nov. 7th received. I take Gleanings but I hadn't taken any notice of the article referred to regarding the capping melter spoiling the honey.

I don't think I have spoiled any of my large 1938 crop of honey with the Brand Melter. In fact, I am proud of the quality in spite of the fact the capping melter honey mixed with the extractor honey continuously as we extracted.

I shipped two carloads of this mixed honey to England and the government inspector when inspecting it found it to be a distinct shade whiter than the grade water white as according to the dominion honey classifier.

I know positively the use of the Brand Melter will not lower the grade of the honey to any extent if the honey is extra white or whatever class it may be. The use of the Brand Melter will not put the mixed honey into a lower class, or spoil the flavor.

If I can get some sample mailing jars I will send you and Roots' samples of my honey and you will see yourselves how the Brand Melter hasn't spoiled my honey crop.

Yours truly,
Warren A. Munro

A. G. Woodman Co., Grand Rapids, Mich.

Manufactured by
S. P. Hodgson & Sons
New Westminister, B. C. Canada

Superior Honey Co.
Ogden, Utah

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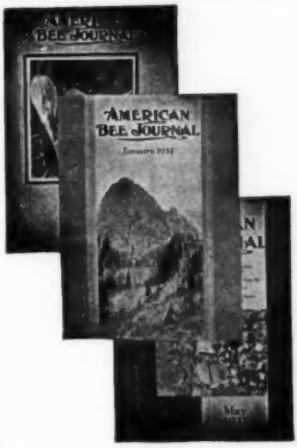

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American Bee Journal, Hamilton, Ills.

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of December).

California Points: Southern California—The weather has been generally clear, with practically no rainfall and with temperatures ranging from normal to considerably above normal, in some cases reaching over 90°. Not only has rainfall been lacking, but with drying desert winds and high temperatures plants in the hill section are becoming dangerously dry and unless rain falls very soon beekeepers fear that it will be too late to help sage plants for next year's nectar flow. Fires have burned over thousands of acres of good sage territory. In cultivated areas bees are working on mustard cover crop and eucalyptus bloom and carrying some brood. Most colonies have ample stores for winter. Honey is in moderate to fairly good demand but market prices are barely steady to weaker due to the competition of Eastern honey at low prices. However, some sizable orders for eastern shipment are now being booked for delivery soon after January 1. Stocks in the hands of the beekeepers are lessening and in some areas are reported as cleaning up. Sales by beekeepers in ton lots or more at Southern California delivery points reported per lb. as follows: Orange, Extra White 5-5¼c, White 4½-5c; Sage-Buckwheat, Light Amber to Extra Light Amber 3½-3¾c. Beeswax has been generally steady at 14-16c per lb. delivered Los Angeles, and some lots of bright yellow wax brought as high as 17½c, delivered Los Angeles.

Imperial Valley—Few sales reported Light Amber to Extra Light Amber Alfalfa $4.20-4.40 per case of 120-lbs. at country points, or $4.40-4.50, few low as $4.25 per case delivered Los Angeles.

Central California—Precipitation has been negligible during this period and is becoming badly needed. Filaree and other spring weeds

Carniolans
Caucasians

Very gentle at all times, very prolific, wonderful workers. Hundreds of pleased customers. Ask for my free paper and learn more about them. Queens and packages in season.

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Quality bred package bees Nuclei and Queens for Spring 1939 delivery. Place your order and be assured of your bees when wanted. Write and let us figure with you on your need.

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Jensen's Bees and Queens
For 1939

We want your business on the same old basis. You must be satisfied. Quality products and service that pleases are our first aims. Again our queens will be reared under the personal supervision of N. C. Jensen, whose queen-rearing experience covers twenty-five years.

	2-lb. pkgs.	3-lb. pkgs.
1- 10,	$2.45	$3.10
11- 50,	2.25	2.90
51-100,	2.10	2.75
101-500,	1.95	2.60
Queens	1- 25,	$0.75
	26-100,	.70
	over 100,	.65

Jensen's Apiaries Co.
Macon, Miss.

121 N. Alabama St., Indianapolis

We are at your service. Our stocks are in good condition. We will gladly quote on your 1939 requirements. Any time you are in Indianapolis we wish you would drop in at our place. You can see for yourself the fine quality.

Root QUALITY Bee Supplies

We Can Save You Money

The A. I. Root Company of Indianapolis

have started, but are suffering for lack of rain. Temperatures have averaged above normal. The heavy frosts have done no harm to the bees, but eucalyptus in exposed locations has suffered somewhat. Where eucalyptus is in bloom, a little brood is reported.

SUMMARY—Although fluctuations in temperature during the period were wide and frosts reached southward to Florida, the period as a whole was remarkable for abnormally warm weather throughout the entire country. In the Plains Area most temperatures ranged 10° to 14° above normal for the entire period. Rainfall was light or lacking over much of the West, except on the Upper Pacific Coast. Throughout the East moderate to heavy rains fell in scattered areas, improving plant prospects somewhat. However, much more precipitation is needed in most areas and the situation is becoming critical in parts of the Southeast, the far Southwest, and in much of the Plains States. Beekeepers in Southern California are already apprehensive concerning next year's sage flow because of the lack of rainfall. Because of the unusually mild weather bees have been able to take occasional flights over a wider area than is usual at this season of the year. The unusual amount of bee activity since the last nectar was gathered, and even since feeding was done, has caused abnormal reduction in stores, but where unusually heavy stores were left, as was the case in many yards because of the low price of honey, and where colony strength is adequate, the late flying is of advantage to colony wintering. Large lot buyers of honey seem to be temporarily supplied in large measure but some interest is reported in sales for shipment after the first of the year. Further, many commercial beekeepers who have for the last few seasons been selling primarily to large buyers, have been bottling their honey themselves or packing it in small pails and selling either to local or nearby stores or in some cases direct to the consumer, and almost always with greater profits than they made selling in large lots of 60s. Comb honey is increasingly scarce. Beeswax is dull and weak, with little interest being displayed by beeswax buyers.

Monthly Report of Honey Producers

Early in December, 1938, we sent the following questions to honey producers: What per cent of the honey produced in your locality has already left the hands of the producers? Give answer in per cent. 2. At what price has honey been sold or contracted for, if any, in large lots, (carload or less) in your locality during the past month for (a) Extracted honey, per pound? (b) Comb honey, fancy and No. 1, per case? 3. What are prices when sold to grocers in case lots of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) Comb honey, fancy and No. 1, per case? 4. What is the retail price to consumers in your locality of (a) extracted honey in 5-lb. pails, or other retail packages in terms of 5-lb. pails? (b) comb honey, fancy and No. 1, per section? 5. How is honey now moving on the market in your locality? Give answer in per cent. 7. What is your estimate of prospects for a normal honey crop in 1939, considering the present condition of the bees and honey plants? Give answer in per cent of average crops for your locality.

State	Name	Per cent Sold	Large Ex.	Lots Comb	To Grocers Ex.	To Grocers Comb	To Consumers Ex.	To Consumers Comb	Movement	Colo. Wintered	1939 Est.
SE-Ala.	(H. C. Short)	100			.55		.65		Fair	105	90
B. C.	(A. W. Finlay)		.09½		.65		.90		Slow	100	100
S-Calif.	(L. L. Andrews)	80	.05½				.48	.15	Fair	95	50
S-Calif.	(Geo. Larinan)	50					.50		Fair	100	
SE-Colo.	(Otis E. Adcock)	50	.05¼		.40		.50		Slow	100	100
E-Conn.	(Allen Latham)	50			.75		1.00	.27	Fair	100	100
S-Fla.	(C. C. Cook)		.05		.35		.50		Slow	125	100
C-Fla.	(Harry Hewitt)	60			.38		.49		Fair	100	100
SE-Ga.	(J. J. Wilder)	85	.05½		.50		.65		Fair	115	100
NC-Ills.	(A. L. Kildow)	95	.05	2.50	.55	3.00	.60	.15	Fair	90	90
S-Ills.	(Carl E. Killion)	50	.06	2.70	.45	3.17	.68	.16	Fair	125	75
NC-Ind.	(T. C. Johnson)				.55	3.00	.65	.15	Slow	100	75
NW-Ind.	(E. S. Miller)	20			.50	3.25	.65	.20	Fair	100	100
W-Iowa	(E. G. Brown)	85	.05				.60		Fair	100	100
N-Me.	(O. B. Griffin)	65				4.80		.28	Fair	110	100
N-Mich.	(Ira D. Bartlett)	75	.06		.45	3.50	.60	.20	Fair	90	100
E-Mich.	(L. S. Griggs)	50	.05		.38		.49	.18	Slow	125	75
C-Mich.	(E. D. Townsend)	60	.05½						Fair	90	90
E-Minn.	(Floyd W. Ray)	60	.05	3.00	.40	3.50	.49	.20	Fair	100	100
W-Minn.	(B. L. Morehouse)	50	.05¾	3.00	.45	3.25	.60	.20	Fair	105	90
W-Nev.	(Geo. G. Schweis)	100	.04¼		.35	3.25	.45	.20	Fair	100	100
W-N. Y.	(Adams & Myers)				.45	3.50	.65	.20	Slow	100	100
NW-N. Y.	(Geo. B. Howe)				45		.60	.20	Slow	100	100
C-N. Y.	(F. W. Lesser)	30	.07	3.50			.50		Fair	100	100
SE-N. C.	(W. J. Martin)	80	.06¼		.60		.80	.20	Fair	90	100
NC-Okla.	(C. F. Stiles)	70			.45		.65	.18	Fair	90	95
W-Ore.	(H. A. Scullen)	20			.40		.50	.19	Slow	100	100
C-Pa.	(Harry Beaver)	10	.05½		.50		.60		Slow	100	
SE-Pa.	(D. C. Gilham)	35	.06½		.70	4.25	1.00	.25	Fair	92	100
W-S. C.	(E. S. Prevost)	100							Fair	80	80
NE-S. D.	(L. A. Syverud)	50			.41	3.00	.54	.18	Fair	100	90
SE-S. D.	(J. F. Norgren)	40			.45	3.50	.55	.18	Fair	120	90
C-Tenn.	(J. M. Buchanan)	95					.75		Fair	100	
C-Texas	(T. A. Bowden)	75			.45		.55		Fair	100	60
S-Texas	(J. N. Mayes)	95	.05		.43		.50		Fair	90	90
S-Texas	(H. B. Parks)	92			.48		.55		Fair	95	90
N-Utah	(W. H. Hendricks)	15			.42		.56		Slow	93	100
W-Vt.	(Phillip Crane)	95		3.87	.72	4.25	.90	.28	Fair	100	98
S-Va.	(T. C. Asher)	75			.50	4.00	.70	.20	Fair	90	95
SC-Wash.	(Chas. Higgins)	50	.06				.49		Fair	100	100
SE-Wash.	(Ryon R. Isbell)	60	.06¼	3.15	.39	3.25	.43	.18	Fair	100	90
N-W. Va.	(W. C. Griffith)	95					.50	.20	Slow	100	100
SE-Wisc.	(N. E. France)	90	.05				.55	.15	Slow		

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Why Wait?
1939 is Here

Prepare now for your 1939 Honey year. According to the rapidly increasing demand for Comb Honey, a larger crop than ever will be required to supply the market this season. This, in turn, means greater profits for you.

Are you ready to start the year with equipment that will enable you to produce Honey at the lowest possible cost? Don't wait too long, for time is money when the flow is on.

In preparing supplies, remember that Lotz Sections are Sections of Quality, and Quality and Service are as inseparable with us as good bee supplies and timeless effort are necessary for your success.

If you are not on the mailing list write for your free copy of our 1939 catalog. Write for prices on quantities.

August Lotz Company
Boyd, Wisconsin

Root's Goods
in Michigan

—Quantity discounts on your larger orders.

—Special Outfits of Bees and Equipment for Orchardists and Beginners.

Use Aluminum Paint this year. It's best for your equipment.

Prices quoted on application.

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M. H. HUNT & SON
LANSING, MICH.
510 N. Cedar St.

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QUALITY at LOW COST
Look For This Sign

Kelley—"The Bee Man"

Last Call
For Early Order Discounts

Early in February my new catalogs will be in the mail and my extra low winter quotations will be canceled. Send me a list of your needs now for extra low quotations.

$11.00 is my price for working 100 pounds of your wax into regular medium brood, either 6, 7 or 8 sheets per pound. I manufacture all regular catalog sizes of brood and super foundation.

Walter T. Kelley Co., Paducah, Ky.

Manufacturers of Bee Supplies.

DON'T

Purchase your bee supplies until you see our NEW--BIG 1939 bee supply catalog. It's a money-saver for you.

If you are not on our mailing list---write us.

THE FRED W. MUTH CO.
CINCINNATI, OHIO

FOUNDATION

Airco---with true-to-nature base

Our 1939 Prices are Lower

3-PLY

"Best by the Bee Test"

TRY THIS

Take 5 frames with 3-Ply foundation and 5 frames with any other foundation and alternate them in a hive-body. Prove to yourself that 3-Ply foundation is a superior foundation. At the end of the second, third, etc. years, it is still the leader as it was the first. Our big increased sales show that 3-Ply meets the requirements. It is too late when the honey flow is over. Plan now to start with 3-ply.

Root QUALITY BEE SUPPLIES

SEE YOUR ROOT DEALER

The A. I. Root Company, Medina, Ohio

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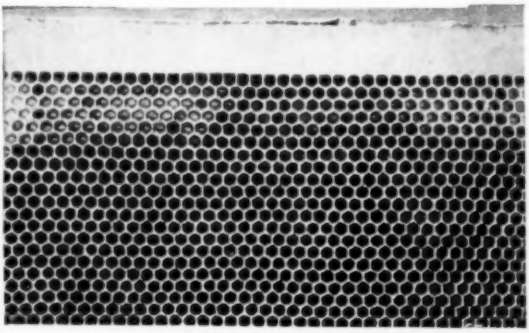
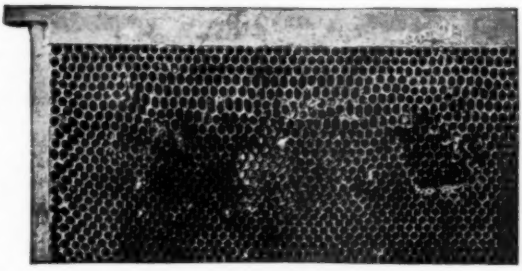


Combs That Do So Much And Cost So Little

GOOD COMB

Many thousands of combs are in use today that were built years ago from Dadant's Crimp-wired Foundation, combs that have produced bees steadily year after year, and carried load after load of honey. Get the most perfect combs that you can get and take good care of them. They are your most precious possession.



POOR COMB

WHAT DO YOUR COMBS COST?

"All costs considered, Dadant's Crimp-wired Foundation is the cheapest, particularly over a ten-year period. Anybody who uses cheap foundation is deliberately adding more cost to his beekeeping."
D. S. Jenkins, Colorado.

"I have received a number of catalogs with prices and have studied them to save money. I find, however, that quality and service considered, you have them all beat. Nothing can take the place of Dadant's Crimp-wired Foundation and Slotted Bottom Bar Frames."
J. C. Cole, Texas.

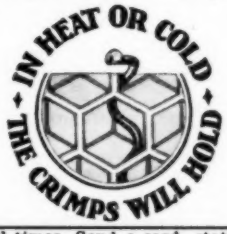
"Many beekeepers see only the number of sheets they get per pound or the amount of money they have to pay. They do not consider what it costs to use the foundation or the combs they get from it. With Dadant's Crimp-wired Foundation you get more comb space, less congestion, less swarming, stronger colonies, more crops, less breakage. When you think about costs, consider these things."
L. R. Stewart, Indiana.

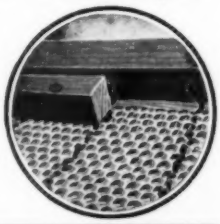
"In my opinion Dadant's Crimp-wired Foundation is the cheapest to use. When culling combs I find that few ever have to be discarded when built from Dadant's Crimp-wired Foundation, and those because of unavoidable damage or accident."
Gordon Bell, Minnesota.

Remember, the cheapest comb is one that lasts for years of crops and many colony build-ups. Let Dadant's Crimp-wired Foundation give you combs that do so much and cost so little.

DADANT & SONS, HAMILTON, ILLINOIS

Makers of Famous Foundations---Crimp-wired---Plain---Surplus





Beeswax Wanted: We buy at all times. Send a card, stating quantity you have to offer

Vol. 67
No. 1

Gleanings
in Bee Culture

January
1939

Is Beekeeping a Hobby?

Grant D. Morse

Or is It a Pursuit that should be Left to Experts?

Maybe we ought to see what is meant by the word "hobby". Webster defines it as "a pursuit in which a person takes extravagant or persistent interest".

These two words, "extravagant" and "persistent", make me smile. I smile because, strange to say, that's what seems to characterize a person with a hobby. You've seen stamp collectors, and rose growers, and women with needlework, and fellows with little shops. They really do take an "extravagant or persistent interest" in their sideline.

Is there any sense in these hobbies? Of course there is. Man is an active animal. His mind is even more active than his body. Too many people are going crazy. In one state in the Union one out of twenty who reaches the age of fifteen goes to an insane asylum. And my male bridge partner says he knows of many more who ought to go.

There are still twenty-four hours in a day despite approximately one-third of the population of the United States getting themselves to bed later at night through a self-deception known as daylight saving. Machinery is steadily reducing man's working hours, thereby yielding him more time to get himself into trouble. That's the opportunity for the man who wants to get into a hobby where he's sure of getting stung right from the start—beekeeping. (I wonder how old that pun is.)

When I first began beekeeping as a hobby, I feared my neighbor professional beekeepers (the ones who do it as a business) would resent my intrusion into a field they might regard as their own. To my pleasant surprise I found this fear was unfounded. I believe the bee journals can be thanked for this feeling of comradery. The bee journals have honestly told the professionals that the hobbyists do at least three things that react to the benefit of all beekeepers: first, they introduce honey as a food into the regular diet among many families where it was not previously popular, thus enlarging the market; secondly, they purchase enough supplies in the aggregate to make the price to the professional beekeeper less; thirdly, they help to dispel the dread, fear, and dislike for the honeybee herself, which is, unfortunately so prevalent.

But to return to our main theme, is beekeeping a good hobby? Dr. George B. Cutten, President of Colgate University at Hamilton, New York, says in a recent article on the "Challenge of Leisure":

"A hobby has seven distinguishing characteristics:

"1. It is persistently pleasurable, it is a joy of existence, it is the source of living; 2. It is zealously pursued, it coaxes tireless indulgence, it is a quest never ended; 3. It is optimistically planned, it is a will-o'-the-wisp with a bright future, it knows no discouragement; 4. It is the subject of enthusiastic conversation; one must pay most men to talk about their work, but it is difficult to prevent

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their talking about their hobbies; 5. It is begun without thought of profit and may even be expensive, hence it is an avocation, it demands an amateur; but the success may become so great as finally to lead the hobby rider into the professional field; 6. It is individually possessed. The mob may indulge in fads or fashions or crazes, but my hobby is my very own; the hobby rider rides alone, the faddist in groups; 7. It makes its possessor free; when working at his vocation he is doing what he has to do, but his hobby frees him from restraint and permits him to do what he wishes."

You and I might think of a different combination of characteristics of beekeeping as a hobby, but I am pleased with Dr. Cutten's list of seven. Of the entire lucky number, the fourth appeals to me as being the one that offers the supreme test: "It is the subject of enthusiastic conversation; one must pay most men to talk about their work, but it is difficult to prevent their talking about their hobbies."

In this connection I am reminded of a thought expressed by Dale Carnegie in his book entitled "How to Win Friends and Influence People". By the way, if you have not read this book, I'm sure you'll enjoy and profit from it. Mr. Carnegie says among the six best ways to make people like you is, "to become a good conversationalist". How easy it is to talk about the bees, if you are a beekeeping enthusiast! He says also, another chief way to make people like you is to "be a good listener". Again, how easy it is to listen to a fellow beekeeper.

To return, finally, to Dr. Cutten's list of distinguishing characteristics of a hobby, we find that beekeeping may in many cases exceed the requirements he has listed. He says under characteristic number 5: "It is begun without thought of profit and may even be expensive, hence it is an avocation, it demands an amateur; but the success may become so great as finally to lead the hobby rider into the professional field". Beekeeping may reasonably exceed Dr. Cutten's fifth requirement because if properly managed it will reimburse the hobbyist for all his expenditures of money, and since our heart is so close to our pocketbook, beekeeping may the more easily become our treasured hobby.

Saugerties, New York.

Bees belonging to the University of Cambridge, England. Though the average American thinks of Cambridge as devoted exclusively to classics and mathematics, this is not the case, and a degree may be had in agriculture also. There is an active local association of beekeepers, with an interesting summer program of lectures and demonstrations, many of the latter being held here in the university botanical gardens.—H. H. Scudder, Durham, N. H.

Modified Two-queen System

Dr. W. E. Dunham, Ohio State University

Especially Well Adapted to Regions where White Dutch, Alsike, Sweet Clover and Alfalfa are Prevalent

Preliminary studies on the usability of the two-queen system for Ohio conditions were commenced at the Ohio Experiment Station during the season of 1938. After careful consideration of the type of major honey flow from the clovers and some of the commercial problems of honey production, a modified two-queen system was adopted and tested. The modified two-queen system adopted by the Experiment Station embodies the following manipulations:

Arranging Colonies for the Two-Queen System

At the beginning of the dandelion flow, or previous if colony strength warrants, two or three frames of emerging brood with adhering bees along with three frames of honey are placed in a hive body. The hive body containing the emerging brood, bees, and honey, is now placed over the parent colony with a double screened inner cover separating the two units. (Figs. 2a and 2b). A young laying queen is now introduced to the upper unit and at this time an entrance is provided through the inner cover. (Fig. 1.)

There are two features of the specially constructed inner cover which are important: First, the double screening of the inner cover with ¼ inch space between the two screens prevents any communication of the bees in the parent colony with those in the upper unit, and as a result queen introduction is not a problem. Second, the heat from the lower unit rises and is of material aid in helping the weaker unit in developing more rapidly. (Fig. 1.)

Normally colonies used for this system are in two-story hives. In case one-story colonies are utilized it is important to add a hive body of dark combs to the parent colony at the time it is arranged for the two-queen system.

If colony development has been favorable, by early June there will be many two-queen colonies in need of extracting supers. Such colonies are manipulated by placing a queen excluder over the two stories of the parent colony and then adding a super of drawn combs. (Fig 2c.) The upper unit is simply raised up and set on top of the extracting super. The upper unit should also be examined at this time and if the colony needs room from the standpoint of storage space and room for the bees a shallow or deep extracting super may be added with a queen excluder separating the two hive bodies. (Fig. 2c.)

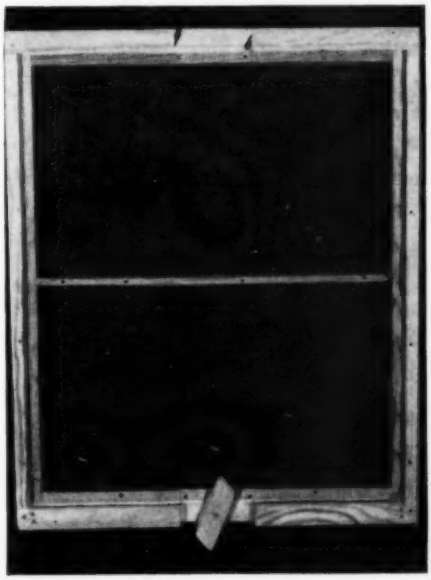

Fig. 1. A double-screened inner cover with ¼ inch space between the screening.

Reducing the Two-Queen Colonies to a One-Queen System at the Beginning of the Clover Flow

At the beginning of the clover flow the two-queen colony is reduced to a one-queen system of management. The brood nest of the upper unit containing the young queen is set to one side. All the frames of unsealed brood with the exception of one are exchanged for frames of emerging brood from the parent colony. The upper unit, now containing one frame of unsealed brood and the remaining frames of emerging brood along with the young queen is placed on the bottom board of the parent colony. A queen excluder is placed

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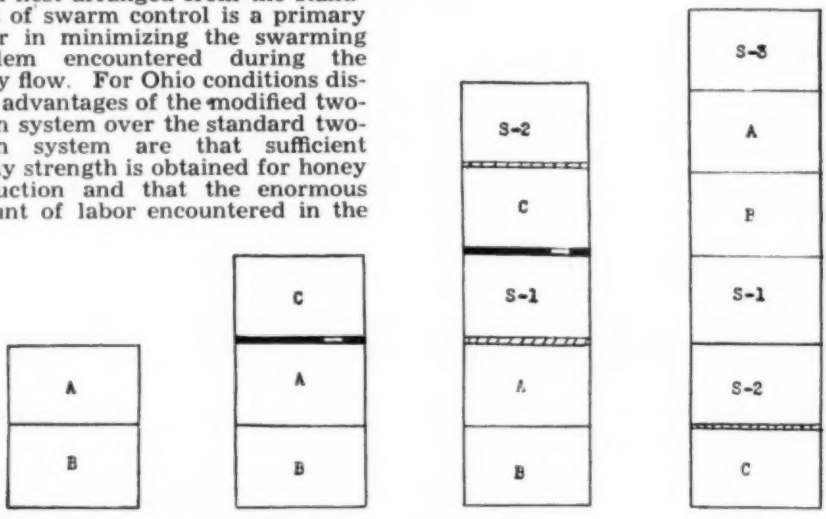
over the single-story brood nest. Super number 2 containing drawn extracting combs is added, then follows super number 1, which should be well occupied by bees and may contain some new nectar. The old queen is now removed from the two-story parent colony and these two hive bodies of brood placed over the supers of the newly arranged single-queen colony. Super number 3 is placed on top of brood chamber A. (Fig. 2d.) If this colony needs more storage space during the honey flow, supers may be added advantageously by the top-supering method.

Advantages of the Station's Modified Two-Queen System

The management of colonies by this system insures an enormous bee population at the beginning of the clover honey flow and reserve strength in the form of large quantities of brood. Requeening is accomplished without any interruption in brood rearing and at a time of year when equipment is light in weight so that labor costs are reduced to a minimum. The general requeening of colonies in commercial apiaries at the close of the harvest period when the crop is on the hives makes it almost a prohibitive practice from the standpoint of the physical limitations of man power. The presence of a young laying queen at the beginning of the honey flow in a single-story brood nest arranged from the standpoint of swarm control is a primary factor in minimizing the swarming problem encountered during the honey flow. For Ohio conditions distinct advantages of the modified two-queen system over the standard two-queen system are that sufficient colony strength is obtained for honey production and that the enormous amount of labor encountered in the latter system during the harvest period is largely eliminated. In many of our important honey-producing areas the bee forage has been modified during recent years by the introduction of new legumes. Not only do these areas offer a flow from the white Dutch and alsike clovers, but also from the sweet clovers and more recently alfalfa. This changing condition means that not only is it important for beekeepers to have strong colonies at the beginning of the early clover flow, but that colony strength should be maintained to insure maximum crops from the later yielding legumes. The modified two-queen system adapts itself well in such areas as an enormous bee population is insured for the white Dutch and alsike flow; the reserve strength in the form of brood insures an enormous number of field bees for the sweet clover flow; and the presence of a young vigorous queen having ability for heavy egg laying maintains the peak of bee population for the late sweet clover and alfalfa flow.

The tests conducted by the Ohio Experiment Station during the past season show that the check colonies managed by the orthodox method averaged approximately 150 pounds of honey while the average production of those managed by the modified two-queen system was 240 pounds.



Figs. 2a 2b 2c 2d

Fig. 2a. Representing a 2-story colony during the early spring period. Fig. 2b. Arrangement of the 2-story colony (Fig. 2a) for the two-queen system. Fig. 2c. Extracting supers added to both units with queen excluders over the brood nests. Fig. 2d. The two-queen colony (Fig. 2c) reduced to a single queen system and the hive-bodies arranged for most advantageous storage.

Apples are Full of Surprises

Mrs. Benj. Nielsen

The Biblical Sweet Plus the Biblical Fruit of Temptation Produces Combinations for which Adam's Descendants Continue to Fall

Honey apples with raisins is a dish bound to become a family favorite.

"An apple a day" may not keep the doctor away but it would improve the diet of most families. The idea of the old maxim is sound indeed, for the apple supplies an easily digested form of sugar. Combined with honey, the natural sweet, which requires no change before it is assimilated, you have a team worth rooting for! The apple also contains valuable minerals, including calcium, phosphorus and iron, and two vitamins essential to health and normal growth. Because today we examine our foodstuffs for vitamin content, it is interesting to know that the apple is high in vitamins B and C and furnishes a plentiful amount of roughage. Vitamin C is the one easily destroyed by heat, so raw apples have special food value. Raw apples require chewing, therefore they are an aid in keeping gums and teeth in good condition.

Perhaps it is most frequently used raw, yet no fruit lends itself to greater variety of cooked uses. Blended with honey, dishes possess an unusually fine flavor. Serve honey sweetened apples with rich meat for the acidity of the fruit tends to overcome sluggishness of digestion caused by the fat.

For cooking, the perfect apple is the juicy, tart, and firm fleshed variety. Any apple may be rendered delectable with a bit of assistance from the cook. This procedure may involve the judicious addition of tartness, spices, and a bit of sweetness. Only enough honey should be used to sweeten, not mask the characteristic tartness. If tartness is lacking it may be added in the form of lemon juice.

Will your family eat apple sauce? If not, why not try dressing it up a bit? Add a bit of honey, and a few slices of lemon, orange, or grapefruit and allow the honey and citrus flavor to permeate the apples before serving. Or, add a cup of cleaned raisins while the sauce is cooking and allow time enough to plump the raisins. If you would have an attractive looking sauce, add a few red cinnamon candies—the tangy flavor imparted is delicious. If the apples have been in storage and the flavor seems just a little flat, try cooking the sauce with a bit of stick cinnamon and sweeten with honey. The honey should be added after the sauce has been removed from the fire, in all cases, to really preserve the fine flavor of the honey.

With a bowl of delicious honey-sweetened apple sauce on hand, and a honey graham cracker crust chilling in the refrigerator, one is never at a loss for an emergency dessert, should unexpected company drop in.

If your family has tired of the usual baked apples, try filling the centers with raisins, brown sugar, butter and a dash of spice and a light drizzle of honey; or prunes stuffed with nuts, drizzle with honey and sprinkle with a bit of grated orange peel. Bake in a moderate oven.

Apple Snow

Six tart apples, 2 tablespoons lemon juice, ⅓ cup honey, 3 egg whites and toasted or tinted coconut.

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Pile apple snow in sherbert glasses and serve thoroughly chilled.

Pare, quarter, and steam the apples until tender. Press through sieve or chop very fine. Add lemon juice to apples. Beat egg whites until stiff and dry, then drizzle honey in lightly, beating constantly with rotary or electric beater. Combine apples and honey meringue thoroughly. Pile in sherbet glasses and garnish with toasted or tinted coconut. Serve thoroughly chilled.

Apple Pancakes

One tablespoon butter, 2 tablespoons honey, 2 eggs, 1½ cups sifted flour, ⅛ teaspoon salt, 1 teaspoon baking powder, 1 teaspoon cinnamon, 1 cup apples, peeled and chopped fine and ½ cup milk.

Cream butter and honey, add beaten eggs, flour sifted with baking powder, salt and cinnamon, chopped apples and milk. Bake on hot griddle and serve piping hot with plenty of honey.

Honey Apples with Raisins

Four cups pared and quartered apples, ⅓ cup honey, 1 cup raisins, ¼ teaspoon salt, ¼ teaspoon cinnamon, ¼ teaspoon nutmeg, ¼ teaspoon cloves, 3 tablespoons lemon juice, ½ cup soft honey bread crumbs, 2 tablespoons butter and ¼ cup water.

Fill buttered baking dish with alternate layers of raisins, apples and bread crumbs. Drizzle each layer with honey and sprinkle with the combined dry ingredients. Dot with butter, add lemon juice and water. Cover. Bake in moderate oven, 375 degrees F. for 45 minutes. Serves 6.

Honey Apple Custard

Three cups sliced tart cooking apples, ¾ cup water, 2 tablespoons honey, 2 eggs, ⅓ cup honey, ½ teaspoon salt, ⅛ teaspoon nutmeg, 2 tablespoons cornstarch, 1¼ cups cottage cheese, ¾ cup milk, and a bit of ground cinnamon.

Cook apples in the water until tender. Puree and add the honey. Distribute the applesauce among six custard cups. Beat the eggs, add honey, salt, nutmeg, and the cornstarch, moistened with a little of the milk. Stir in cottage cheese, which is well drained, and remaining milk. Scald mixture and pour over apples in the custard cups. Sprinkle lightly with cinnamon. Place in pan of hot water. Bake in moderate oven, 350 degrees for 1 hour.

Honey Apple Muffins (with graham crackers)

Two tablespoons butter, ¼ cup honey, 1 egg yolk, 30 honey-flavored graham crackers, crushed fine, 2½ teaspoons baking powder, ¼ teaspoon salt, ½ teaspoon cinnamon, ½ cup milk, 1 cup chopped raw apple, and 1 egg white.

Cream butter and honey together, add egg yolk. Combine finely crushed graham crackers with dry ingredients and add alternately with the milk to the first mixture. Add chopped apple and fold in stiffly beaten egg white. Drop batter into well oiled muffin tins. Bake in hot oven, 400 degrees F. about 20 minutes. Makes 12 muffins.

Honey Apple Up-Side-Down Cake

Wash whole apples (Jonathans or Winesaps preferred), remove cores, leaving peel on, and slice crosswise making half-inch rounds. Place apples in shallow kettle (an iron skillet is ideal) and add honey to one-half the depth of the apple slices. Bring to bubbling point and let apples simmer until clear, about 15 minutes. By leaving the peel on, the rounds hold their shape better and pectin is added to the syrup forming a delicious thin apple jelly. This syrup will be used in the bottom of the cake pan.

Melt 1½ tablespoons butter in a skillet, add ½ cup of the honey apple syrup and heat to boiling point. Remove from fire and fit the honeyed apple rounds into the bottom of skillet. Fill spaces between rounds of apples with nut meats and in the center of each ring place a maraschino cherry.

For the gingerbread batter you will need: One-third cup butter, ½ cup brown sugar, ½ cup honey, 1 egg, 1⅔ cups sifted flour, 1 teaspoon ginger, ⅛ teaspoon cloves, ¼ teaspoon salt, ½ teaspoon soda, 1 teaspoon baking powder, and ½ cup sour milk.

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You will like the elusive flavor and surprise ending of these honey apple custards.

Cream butter, sugar and honey together, add well beaten egg. Sift flour and measure. Combine with other dry ingredients. Sift again and add half of the dry ingredients to the creamed mixture, stirring only enough to blend, add the sour milk and remaining flour and stir lightly to mix. Bake in moderate oven, 350 degrees F. for 25 to 30 minutes.

Honey Apple Dumplings

Three cups sifted flour, 1 teaspoon salt, ¾ cup shortening, 1 cup milk, 1 tablespoon lemon juice, ¼ cup honey, ¼ cup brown sugar, 1 teaspoon nutmeg, 3 teaspoons baking powder, 1½ cups sliced apples, 2 teaspoons grated lemon rind, 1 tablespoon cinnamon and 2 tablespoons butter.

Sift flour and measure. Resift with baking powder and salt. Cut in shortening and add milk; mix lightly until all flour is moistened. Turn out dough on lightly floured board; roll to ¼ inch thickness. Cut into ten-inch squares. Place about 6 slices of apple in each square, drizzle with honey, which has been mixed with the brown sugar and spices. Dot with butter and sprinkle small amount of lemon juice and rind over each dumpling. Fold dough over, pinching together. Place in greased shallow pan; cover with sauce and bake at 450 degrees for 15 minutes. Reduce heat to 375 degrees and bake 30 minutes longer.

For the sauce combine: One-half cup granulated sugar, ½ cup brown sugar and ⅓ cup honey, 1 cup water, ¼ teaspoon cinnamon and 2 tablespoons melted butter. Cook 5 minutes and pour over the dumplings.

Apple Oatmeal Pudding

One and ½ cups sliced apples, ¾ cup brown sugar, ¼ cup honey, 1 egg, 1 cup quick cooking oatmeal, ½ teaspoon cinnamon, ⅛ teaspoon cloves, ½ teaspoon salt and 1 quart milk.

Slice pared apples into a buttered baking dish, mixing half of the brown sugar with them as they are being sliced. Add remaining sugar, honey and salt to the well beaten egg. Stir in the oatmeal, spices, and milk. Pour over apples. Bake in slow oven, 325 degrees F. for one hour. Serve with thin cream.

Aurora, Nebr.

THOUGHT RAISER IN DECEMBER GLEANINGS

Allen Latham

Several months ago I stated in an article which I was asked to write for the Harvard Alumni Bulletin, that bees did not fly in a straight line. This statement has brought more or less comment and a doubt (page 775, December Gleanings, for example.) An illustration which I will now offer will go far to show the correctness of my statement.

During the first decade of this century I kept bees in my cottage on the shore of Cape Cod Bay in North Truro not far from the Provincetown line. The shore line here was semicircular to a large extent and we had to look across the water to see Provincetown and the sand-dunes back of the town. On these sand dunes there were many bushes and plants many of which yielded honey, and the streets of Provincetown had numerous plots of white clover. It was slightly over two miles across the water to these nectar sources.

On calm days, especially in the forenoon, I often saw bees lining across over the water while I was out in my boat. Very early in the afternoon the southwest wind would begin to increase in force and by the time it reached 15 to 20 miles an hour one would not see the bees any more, yet they kept right on working as one could see by looking at the entrances in the cottage walls.

A railroad runs along this shore to Provincetown, and its track lies lower than the county road almost the entire way. The county road lay between the railroad and the shore. Just as soon as the wind began to bother the bees they would no longer cross the water but would follow the depression in which the railroad ran, this offering a shelter from the wind. When the home-going bees came opposite the cottage they would make an abrupt turn and shoot up over the fence and road to the cottage. The turn was so abrupt that it was practically a right angle.

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Buying Box Hives.

Walter H. Hull

Bees in Box Hives must be Transferred into Modern Hives

Several states have recently passed laws that prohibit keeping bees in box hives. As these laws are put into effect many box hive beekeepers will prefer to sell their bees rather than go to the trouble and expense of changing to movable-frame hives. There is a chance here for the up-to-date beekeeper to make a little money and at the same time accommodate his box-hive neighbor, not to mention helping to solve the box-hive problem in his neighborhood.

The price is generally around $1.00 per hive. That is, a man can scarcely afford to pay more than that. True, many of these box hives, or "gums", are big barn-like affairs. The wax in them may alone be worth a dollar or more, and there may be several dollars' worth of honey—if you could only get it out. The chief item of expense is labor, of which there is considerable required, but the cost of queens must also be added, as most box-hive bees are poor stock that have to be requeened.

Experience indicates that the best way to proceed with the honey is to pry the boards off the top of the gum, the covers generally being nailed fast, smoke the bees down, trying not to use so much smoke that it will taint the honey, and dig out what honey you can. It won't be much, nor of much value, although of fair quality after being strained, but it should pay for the work, and there will be a distinct advantage in having no comb or honey attached to the cover when you come to transfer the bees.

The Driving Method

I tried two different ways of transferring. One was to drive the bees up into a movable-frame hive, put a super cover onto the gum, with queen excluder zinc tacked over the escape hole, and set the hive on this super cover, leaving an opening into the hive and closing the gum up tight.

Solid mat of moth cocoons almost two inches thick on a super cover used in connection with transferring bees from box hives. The moths get in before the bees are all out.

In three weeks the young bees should all be hatched from the gum and the gum ready to remove. By doing this early—about the beginning of swarming season—the bees should, theoretically, be in prime condition for the main honey flow a few weeks later. But I did not succeed in making it work that way. The weather was often cold and windy. I found the bees especially hard to drive out of these tall gums. If any combs were broken in getting the covers off, so that honey ran out, they would not drive at all. Sometimes the queen did not go up and the bees all went back down. Generally the nights were cold, so that in several cases the bees deserted the queen and went back onto the brood below.

Also the lack of uniformity in results caused the loss of much wax, later in the season, as some of the gums had established colonies with queens still in them, some with hatching bees but no queen, and some with merely a few old bees; and it was not easy to tell which was which. By the time the bees were out the moths would be in—often before; and moths can do amazing things with a few pounds of wax in

the form of bee comb. The picture shows one of the super covers used. It seems to be covered with a thick layer of cotton, except in the upper left hand corner where some fancy scroll work can be seen. That corner is where I started to scrape off the moth cocoons—a solid mat of them almost two inches thick.

Method of Cutting Out Combs

The other method of transferring is merely to knock the hive to pieces, cut out what brood is fit to save and clip it into frames with rubber bands cut from a discarded tire tube, fill the rest of the hive with combs or frames of foundation, shake the bees into it, and carry away the remains of the gum.

This plan calls for a little more labor than the other, especially if the hives are big and have much comb in them. It is messy. You need plenty of water to clean up with afterward. It is rather impractical except in a honey flow heavy enough to forestall robbing, and beekeepers are likely to have little time during such a honey flow for messing with box hives. But those few objections just about complete the argument against it, and there is much in its favor.

Results are definite; there is no uncertainty as to whether the colony is transferred or not. There is no hung-fire, delayed-action business connected with it; no going back to see if you can complete the job, and maybe having to go back yet again before it can be completed. Three or four reasonably good brood combs are obtained from each gum. A man can do ten or twelve colonies per day, even under the hardest conditions, and generally more. Loss of wax and honey is reduced to a minimum. The bees are placed in workable hives at once.

When bees are in standard hives, on crooked combs, or in boxes of similar size and shape, with removable covers, the driving is much easier and results more certain than with the tall gums. Under those conditions many of the objections to the first plan would be removed.

Uncertainty of results is one of the objections to this plan of letting bees transfer themselves. They are hard to drive out of these tall gums. Supers have been put onto the new hives here in the expectation that bees would go to work in them somewhat like new swarms, but it was several weeks before they finally went to work.

A typical box-hive apiary. Buying them when offered for sale may be good business for the up-to-date beekeeper. Often there is wax enough in them to pay the cost. But it is not all profit.

BEES DO NOT APPROVE OF BRIDGE

Mrs. H. B. Kohr

This was fairly well proven by the experience of L. K. Fortney, Wichita, Kansas. Mrs. Fortney, thinking small squares of honey would be a different favor at her bridge club, had Mr. Fortney construct quarter-pound boxes, which he fitted snugly together in spaces intended for pound boxes. Each quarter pound was neatly equipped with starter. The bees would have nothing to do with the under-sized boxes. Mr. Fortney changed the starter and put the small boxes into a lower super. The bees made honey all around the quarter-pound boxes but still left the favor boxes strictly alone.

Wichita, Kansas.

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Writing on the Wall

Bruce L. Morehouse, Secretary of Minnesota Beekeepers Association

By courtesy of "The Minnesota Horticulturist".

The writer is not posing as "a Daniel come to judgment," but merely calling attention to the serious situation that now exists in regard to declining honey prices, the trend of competition among beekeepers, and possible action to forestall calamity to our business.

Since world war days we have seen the price of honey steadily decline to a third of the marketing prices then, while costs of equipment, apiary operations, and family living expenses have steadily increased. If this is not alarming to beekeepers, then they better wake up!

To an extent, beekeepers have allowed this thing to come to pass. They have competed one against another in marketing their product, ever cutting the marketing price until production cost and selling price are almost in line. Nature has staved off the day when many beekeepers would have been forced to quit, had not the abundant yield of sweet clover enabled the favored ones to produce honey at a lower cost per pound, per investment dollar, or per operator.

Why Prices Decline

But now that commercial beekeepers with hundreds and thousands of colonies are competing for markets on a price basis one wonders where the bottom will be. We are witnessing now the alignment of beekeepers into cooperatives for the purpose of competition with other beekeepers, not to stabilize honey prices on a profitable basis but to unload the honey for whatever it will bring, which means eventually to "freeze out" those who have not sufficient backing to stay in the business. Thus all beekeepers lose! As near as we can figure it out the people who stand to profit most by this trend are the salaried cooperative officials. We are witnessing pailed honey being sold to grocers by a cooperative at carload prices in the Twin Cities market which is the logical big city market for Minnesota beekeepers.

There are some fine features about the cooperative movement, but there are marketing expenses which must be borne by the members. While perhaps these expenses are lessened because of cooperation, it still must follow that because of a policy of meeting competition merely by lowering prices the members received from one to one and a half cents less per pound for their 1937 crop than did many non-members. Price competition is "killing the goose that lays the golden eggs" for cooperative members and non-members alike.

Beekeepers Must Save Selves

In the face of decreasing prices and increasing costs of production, many beekeepers are finding it difficult to stay in business. All must live either by their own efforts or if those efforts fail to produce a living, then on government aid. What, then, can be done to stop this downward trend in honey prices so that the beekeeper may receive a living profit? What can be done to stop this foolish competition on a price basis only? Beekeepers must answer these questions and save themselves.

Without any action whatsoever conditions will drift from bad to worse. Some sort of government pegging of prices, with penalties for non-cooperation, might work, but the probability of such a thing coming about is unlikely. The many small beekeepers have not sufficient investment to expect them to do anything. But the commercial beekeepers who operate from a hundred to several thousand colonies, who have a considerable investment and depend entirely upon beekeeping for a living —these men are most interested and should collectively take the lead in any movement for the general good. Examples are common of occupational groups banding together for their own welfare, and why not commercial beekeepers?

Should Commercial Beekeepers Organize?

It may be that the time has arrived when commercial beekeepers of Minnesota and adjoining states should band together in an effort to lead the way in solving our problems. The summer meeting at Grand Forks pointed out how many such beekeepers there are, and if these and many

(Continued on page 59)

Chemical and Physical Properties of Honey

R. E. Lothrop

Carbohydrate Research Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture

(Continued from December issue)

Honey Colloids

In all types of honey are to be found very minute particles of suspended matter called "colloidal particles". These minute particles do not settle out of the honey, but remain suspended indefinitely. They are distinguished from ordinary suspended particles, since the latter tend to settle out, and can be removed by ordinary mechanical means such as straining through closely woven fabric, or filtering. The colloidal particles, on the other hand, are much smaller and are not affected by ordinary straining or filtration. In normal floral honey these minute particles are kept in suspension by virtue of positive electrical charges carried by them. This causes them to repel each other and thus remain in suspension. In case of certain honeydew and tree honeys, the electrical charges may be negative, which likewise would produce a repelling action, and thus tend to keep the particles in suspension. If the electrical charges on these particles are removed, either by adjusting the acidity, or by addition of the correct amount of a colloidal suspension (such as bentonite) carrying opposite electrical charges, they show a tendency to flocculate and settle out of the honey.

While this method of clarification is not recommended for treating honey intended for use as a food, it has been found extremely useful when honey is used as a media in certain bacteriological work. Honey is frequently used by bacteriologists as a media for studying certain types of yeast. When used in this way the honey is mixed with agar agar and the media allowed to solidify. In the past trouble has been experienced by the flocculation of the colloidal honey particles by the agar agar. This causes many small spots to develop in the agar media, which may be confused with the yeast growths, or may even obscure them altogether. Preliminary treatment of the honey with bentonite before it is used in making the honey-agar media, in order to remove colloidal matter, obviates this difficulty entirely. The honey-agar media is then perfectly clear, and the growth and development of yeast cells can be ascertained with a high degree of certainty. This method of preparing honey-agar media was developed at the Bureau of Chemistry and Soils, U. S. Department of Agriculture, and is discussed fully in an article by H. H. Hall and R. E. Lothrop in the Journal of Bacteriology, volume 27, pages 349-55 (1934).

Honey colloids appear to be very heterogeneous and to vary in composition very widely among different floral types of honey. There is always present appreciable quantities of protein material, wax particles, pollen grains, silica, and other extraneous matter. Substances such as enzymes (invertase, catalase and diastase) are also included in this class of substance.

These substances, although present in very small amounts, exert a very great influence on the properties of honey. The presence of proteins exerts a depressing effect on the surface tension of honey, which in turn produces a marked tendency to foaming and scum formation, as well as increased tendency of the honey to retain finely divided air bubbles. Beekeepers who are familiar with buckwheat honey know how readily it tends to foam and produce surface scum, which is due largely to its high protein content. Other types of honey that contain relatively large amounts of colloidal matter behave similarly. These substances also, to a greater or less extent, exert influence on such properties of honey as darkening in color when heat is applied, granulation, turbidity (cloudiness) and, in some cases, color. (See Colloidal Substances in Honey.)

Amino Acids and Related Compounds

In addition to proteins, the existence of other nitrogenous substances in honey has been established. The presence of amino acids, and substances closely related to amino acids has been established by

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isolating the acids from honey as mercury compounds, and subsequently determining the amounts present by use of a color test. Amino acids, it might be explained, are produced when meats or other protein-containing foodstuffs are completely broken down by the digestive process. They are the end products of protein digestion, and represent the form in which digested proteins enter the bloodstream to be used in building up body tissue. The quantity of amino acids found in honey is usually quite small and therefore probably not of any appreciable nutritive value. However, they are assimilated directly without having to undergo any digestive process. Their presence may be due to the breaking down of a portion of the albumins and other proteins of honey by a protein-splitting enzyme.

Due to their tendency to combine with the sugars of honey, amino acids produce dark-colored compounds known as "melanoidins". Melanoidin formation takes place very much faster at high temperatures, so that the darkening that takes place when honey is heated (commonly known as caramelization) is due partly at least to the presence of amino acids and related compounds. The darkening of honey when stored for long periods might also be explained on the same basis.

The caramelization temperature of honey is of considerable importance when honey is to be used as an ingredient of candy, for baking, or for similar purposes that require heating to elevated temperatures, so that the presence of amino acids, although they occur in only very small amounts, has considerable significance when considered from this standpoint.

Minerals, Acids and Flavoring Components

These three classes of substances which occur in honey are very largely responsible for the differences in the taste characteristics of different floral types. It might be said that they very markedly affect the gustatory senses. Very little is known about the identity of the individual compounds that make up the true flavoring components of honey. They are quite volatile and therefore easily driven out of the honey by heat. Every beekeeper knows the delightful aroma that permeates the atmosphere of a honey house while extraction is going on. These essence-like substances give to honey its delicate aroma and flavor. Since they originate from the flowers from which the nectar is gathered, they undoubtedly are of the nature of "essential oils" that constitute the odorous components of flowers and plants.

It has been determined that orange honey contains a substance called "methyl anthranilate" which is not found in any other floral type of honey. The distinctive aroma of orange honey is attributed to this substance. This substance belongs to a class of odorous compounds known as esters, and it is quite likely that a number of other esters are also found in honey. This suggests the possibility that the identity of the flavoring compounds present in a honey might serve as a means of determining the floral source. However, such a study would involve very extensive work, and since these individual compounds are present in only very small amounts, the task would be a very difficult one.

The acids present in honey appear to consist largely of malic and citric, with smaller quantities of succinic, acetic, and formic acids. Malic and citric acids are found very widely distributed in fruits and other plant materials, so that their presence in honey is quite to be expected. In addition to the acid taste imparted to honey by these acid materials, the effect that they produce on the flavoring substances themselves is quite pronounced. If sufficient alkali is carefully added to honey to just neutralize the acids, the flavor is altered appreciably, the honey then having a decidedly flat taste.

In a somewhat similar manner, the minerals impart a taste to honey. In the case of honeydew, or honey with a high mineral content, the salty taste may be detected. However, the mineral elements of honey act in still another way that may be of greater significance to flavor characteristics than the salty effect, that is, the action of minerals in reducing the intensity of acidity, which, in turn, changes the flavor characteristics somewhat. The acidity of honey is measured in two ways; one might be considered a quantity effect (the actual quantity of acid present) and the other an intensity effect (intensity of acidity). The former can be determined by neutralizing the acid present in the honey with an alkali solution of known

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strength, and determining the total amount of acid present. The latter requires special apparatus to determine, and is usually expressed on the so-called "pH" scale. In a simple way it corresponds to the intensity of acidity. This intensity factor is, in turn, controlled by three factors, namely, the nature of the individual acids present, the total amount of acids present, and the influence of certain other materials present in honey, such as the minerals. Since the acids which are present in honey are quite similar in nature (belonging as they do to the group called organic acids), the first of the three factors given above probably does not influence the acid intensity materially. It has been determined, however, that minerals probably exert a greater influence on the intensity of acidity than does the total amount of acid itself. Honeys, such as honeydew, that contain comparatively large quantities of mineral matter, have comparatively high pH values (which corresponds to a low acid intensity), even though the total amount of acid present be quite high. Similarly, light colored honeys, containing comparatively small amounts of acids generally show a decidedly low pH (which corresponds to a high degree of acidity). This action of the minerals of honey in reducing the intensity of acidity (increasing the pH) is called a "buffer effect". This not only is of importance in its influence on the taste or flavor of honey, but also influences such factors as color formation, yeast growth, etc.

Viscosity and Thixotropy.

The thickness, or slowness in flowing of honey, is usually called "body". A thick honey of good body is referred to as having a high viscosity, whereas a thin, free-flowing honey is said to possess low viscosity. Viscosity in honey is very markedly affected by temperature. As every beekeeper knows, honey becomes thinner when it is warmed. Honey mixes more readily when its viscosity is low so that warm honey blends more readily than cold honey. In this connection it should be pointed out, however, that when honey is warmed, the greatest decrease in viscosity takes place between room temperature and 100°F. Above 120° F. the decrease in viscosity with increase of temperature is very small, so no appreciable advantage is gained by warming above this temperature for purposes of blending. In fact, even lower temperatures may be used effectively.

The chemical composition of honey influences its viscosity to an appreciable extent. The greatest effect on viscosity is necessarily due to moisture content. An increase of 1% in the water content of honey produces a very decided decrease in viscosity. The so-called dextrins that are present in honeydew honey in considerable quantities perhaps exert a greater influence than any other single composition factor (with the exception of the water content). Honeydew, or honey containing a high "dextrin" content, is considerably more viscous than floral honeys of corresponding moisture content. In a similar manner, the proportion of dextrose and levulose present in a honey exerts some influence on the viscosity. A levulose solution is less viscous than a dextrose solution of corresponding density, so that honey such as tupelo that contains extremely high proportions of levulose is found to be somewhat less viscous than a honey of corresponding water content containing approximately equal quantities of the two sugars. This effect, however, is not so pronounced as is that due to the dextrins. Proteins and other colloidal substances also tend to increase the viscosity of honey. Since the quantity of these substances found in honey is usually quite small, the effect on viscosity is not very great.

In Europe there is produced a honey from heather of such high viscosity that it will not run out of a bottle when it is inverted. Besides being highly viscous, this honey exhibits another peculiar property that is referred to as "thixotropy". By this is meant that the honey will change its viscosity merely by agitation, that is, the viscosity is decreased very materially when shaken. Substances that show this behavior are referred to as "thixotropic". This property is frequently exhibited by colloidal substances, so that the behavior of heather honey in this respect is due to the presence of some colloidal substance. A bentonite suspension, for example, assumes a jelly-like consistency when it stands for some time, but if shaken returns to a fluid state. Honey obtained from heather must be agitated in order to remove it from the comb by

(Continued on page 62)

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From the Field of Experience

BEE HIVES—ANCIENT AND MODERN

John deBurgh Leake

The date at which man first commenced to keep bees is highly problematical. Apiculture was a flourishing industry as far back as history can be traced, and evidence is not lacking that, even in neolithic times, bees and their produce were diligently sought. In the very earliest records of mankind, the industry seems to have been already taken for granted, and, in certain countries, notably Egypt, the practice of apiculture is shown to have flourished about 4,000 B. C. and probably from a much earlier date.

We cannot say for certain how man first came to commercialize the

Primitive straw hive still used in certain parts of Europe.

honeybee. A plausible theory is that in some remote age it may have occurred to a more than normally enterprising bee hunter that it would be better to bring the bees close to his home and under his own control than to hunt vaguely through the forests whenever he wanted a supply of honey. He might perhaps secure an open-air hive or the hollow log in which a swarm had settled, plank it down near his cave or other shelter, and thus unconsciously earn the distinction of having become the first practical beekeeper.

In fact, a similar system of beekeeping exists today in certain parts of the world—including even that go-ahead country, U. S. A.—where apiarists of the old school still keep bees in log "gums". That might well represent the second stage in apiculture—providing bees with domiciles almost identical to those they would choose of their own accord.

As soon as we enter the historical epoch, we are given precise knowledge of the types of hives employed. Virgil (B. C. 70) has left us complete descriptions of the hives of plaited osiers adorning the bee gardens of ancient Rome. These must have been rather similar to the straw skep, with which all Europeans are familiar, and which, with modifications of one sort or another, is used throughout the world. Hives of virgin cork, brick, pottery, reeds, and almost every conceivable substance have from time to time been tried by man in his efforts to find an ideal dwelling for his friend, the bee. Convenience, no doubt, often dictated the choice, as it does today. A South African bee farmer once told me that his Kaffirs keep bees in discarded petrol tins, while one of the most popular hives in modern Ireland is the handy and native butter-box.

The most vital point in the history of bee hives is of course the change-over from a fixed-comb system. Intensive modern apiculture is based on the movability and interchangeability of frames.

Who invented the system? Some say Francois Huber, the amazing blind bee student of Switzerland. Others suggest the Russian, Prokopovitch, as the apiarist rightly entitled to this distinction. Still more insist that the credit belongs to Dzierzon, the German clergyman, who certainly made a serviceable hive round about 1845. Ask any beekeeper hailing from the U. S. A. and he will probably insist that Langstroth was the man responsible. Many Scots believe the movable-comb hive was pioneered during the early nineteenth century by their compatriot, Robert Kerr, of Stewarton, Scotland; while in England I have heard the claims of Neighbour, one of the earliest of the British bee appliance manufacturers, advanced.

There is evidence indeed that hives with movable combs were used in Greece and other countries at least two hundred years ago, so the argument regarding the originator is really rather futile. Like many other inventions, the modern pattern hive was not the work of one mind, but the final result of many minds converging towards the same goal.

London, England.

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BUSY PASTOR PRODUCES 6000 POUNDS COMB HONEY

W. H. Wilson

Fifteen years ago the last of this coming March I took the pastorate of the First Baptist Church of Washington C. H., Ohio, and about three years later secured four stands of bees and, as a little hobby or diversion from my work, enjoyed them very much. I soon discovered that Fayette County was a rare honey field and that there were great possibilities of future development, but my ambition was at that time to get some fine recreation and have some extra honey that I could distribute among those unable to buy honey, as well as my neighbors and friends. My bees increased rapidly and soon my son and daughter were in college and I found that I had a rare resource to assist them, reaching as high as $700 in a single year.

My lot is only about 41 feet wide, yet I find it large enough to provide space for all the bees I can manage. This year I took over 6,000 pounds of honey and sold it at a good price, the entire crop to one man, who came and removed it from the basement, where I find a nice cool place to work. I work my bees for comb honey getting my supers ready through the winter and removing my honey from the bees during my vacation so that it does not interfere with my work. My son and daughter have both graduated from Denison University and my son is taking work in the O. S. U. and my daughter is supervising public school music here in Washington C. H.

Since starting the little apiary, a large number of individuals have become interested, with whom I enjoy a very fine fellowship and advise with them as how to care for the bees. This last season I sold 28 stands and now have between forty or fifty stands.

At some future time when I retire from the ministry I may expand my apiary and still enjoy my bees and from them have a nice source of income.

Washington C. H., Ohio.

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MORE ABOUT BUMBLEBEES

C. M. Isaacson

Allen Latham's article in the November Gleanings interested me particularly, as from early June of this year I have been observing a bumblebee nest in my apiary. A stand of rough boards I had been using to pile supers on appealed to a Bombus queen as a good location to build under—hence every time I worked with my bees, I took a look at their big "cousins."

This Baptist minister obtains pleasure and profit from his bees.

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I can say, at least to the extent of this nest, that the bumblebee does secrete wax. The base of the cocoon layer was distinctly a mixture of wax and bits of refuse, also the first honey-pots. The roof of the nest was waterproofed with a mixture of wax and glue and was very tough—I lifted it off fifteen or twenty times without it falling to pieces. Lovell in his article in the A B C of Bee Culture also mentions the secretion of wax by the bumblebee (page 142).

The nest was composed of dried grass, and by the way did not seem to be an old mouse nest—I had placed the board down only a short time before the queen took occupancy. I believe she had formed it herself out of the heavy natural growth already there. At least she was able to reform it perfectly the several times I purposely disarranged it to see if she could position the grass herself.

My own observation coincides with most of what Mr. Latham says, but I believe that the bumblebee queen does make several cells to store honey in, at least, the species I observed did. Two or three honey-pots were built on the side of the nest, of a different size and shape (lower and much wider) than the cocoons. Also they were formed partially of wax, while the cocoons of course are not.

I saw no signs of lice or other parasites in the nest. If any were present they were too small to be seen with the unaided eye. This may be mainly a matter of locality, of course.

I used a very small amount of smoke when examining the nest and only once did the bees show fight, when a small worker attempted to sting my leg. The queen had a peculiar habit of immediately turning upon her back and buzzing loudly when I touched her. Maybe she preferred to do her fighting in cat fashion—or again she may have been attempting to protect her brood beneath her.

It is interesting to contemplate the much greater capability of the bumblebee queen as compared to her honeybee counterpart. Her *Mellifica* relative can beat her in quantity of eggs—otherwise is decidedly at a disadvantage, almost a weakling in comparison. Specialization tells the story for the honeybee, the Bombus queen is a Jack-of-all-trades. It might fairly be said that the honeybee denotes collectivism—the bumblebee is the rugged individualist. The comparison is not all in favor of the former; at least the bumblebee escapes gathering a vast store of honey only to have men do a "Munich" with her property.

Middle River, Winn.

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SHOOTING SWARMS DOWN

J. F. Dunn

As the December Gleanings did not reach me early this time I could not fill the usual column as formerly. I therefore take the liberty of giving my experiences in handling swarms.

It did not take the writer long to find out that first swarms having old queens nearly always clustered on the low limbs of trees and were easy to handle. The after-swarms having young virgins were the ones that took the "high spots" and sometimes clustered way out at the end of a limb that could not be reached with a ladder. And so I decided no after-swarms must issue. How did we manage it? While the swarm was clustering on a low limb we set the parent colony to one side with the entrance pointing 45 degrees away from the old stand. We then dumped the swarm in front of the hive prepared for it, on the old stand. We put the supers on the swarm, above the queen excluder. The work went right along at the old location and we got just as much additional surplus as if there had been no swarm from the parent hive. On the evening of the sixth day after the swarm had issued we picked up the parent hive and moved it some distance from the old location. All the bees from the parent colony that had reached the age of field workers returned to the old stand and joined the swarm. The old parent colony was so depleted that the bees destroyed all cells as soon as the first cell hatched and there was no swarming from either hive after that.

But some one will say, "what about the first swarm from a supersedure colony?" The swarm from such a colony would have a virgin queen and very likely would cluster on a slender and lofty limb that could not be reached by a ladder. Along the railway tracks you will find discarded nuts that are used to fasten the clamps that hold the ends of the rails together. Screw the nuts

on a discarded buggy spoke or any hardwood stick, and to the end of this tie a small but tough cord. Let the iron nut down to a low position and with all the muscle you possess throw it over the limb and close to the cluster. Then give a quick jerk downward to the hive. The swarm falls in front of the hive and in the bees march.

If the limb is too high for you to throw the line over, don't let them fly away. Shoot them down. Use one of the old-time American Springfield rifles that carries the large calibre bullet, or, if you are a Canadian, the Snider Enfield is just the thing as it will strike at such a short range a sledge hammer blow to a rather large limb and down tumbles your swarm. If you are a good shot, the rifle is preferable, but a good shotgun is the next choice. Don't try it though with a choke bore tube or you may burst your gun. The barrel should have what we call an open bore. The Peter's Cartridge Co. makes a cartridge that with a "patch" over the bullet is used in a shotgun. Or with a sharp knife cut a shot cartridge half way between the powder and the shot, leaving ¼ of an inch uncut which gives the charge more direct action and more of the shot hits the limb. I have never tried this but have been told that it works. If your shotgun has open bore just use large shot and if the limb is not too far away, and you are a good shot down will come the swarm.

Ridgeway, Ontario.

What more can a man want?

INDIANA HAS SKYSCRAPERS

H. J. Link

The accompanying illustrations show two of my yards in 1938. They show only in part as they are scattered in yards of from 48 to 85. But it will give you an idea of the crop I secured in 1938. There were 432 pounds in some colonies and an average of 200 pounds from 236 colonies. Four hives yielded 1620 lbs.

Laporte, Indiana.

Mr. Link is fortunate in his Indiana location.

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HYBRIDS

H. Sheldon Rogers

[Mr. Rogers is a teacher in a Chicago high school. He has selected beekeeping as one of his avocations. At present he operates about 75 colonies.—Editor.]

Six years ago I requeened an Italian bee-yard with queen cells from a Caucasian queen. This produced Caucasian-Italian hybrids. The bees of this cross were so gentle, easy to handle, and in most ways so desirable that I decided to try to develop a strain of bees from them that would breed true and show the best characteristics of the two races combined.

Pure Italians are usually somewhat more excitable than Caucasians and are more likely to fly out to attack passers-by, a bad characteristic in the city or near a dwelling, even though they may not be very prompt to sting. Also here where the lake breeze is strong Italians have a tendency to "dwindle" in May. Caucasians, on the other hand, do not fly out to attack, are less excitable and build up better in May here near the lake. But the Caucasians seem to be satisfied with a small establishment and very quickly contract the brood nest, filling the brood-chamber with honey. Also they propolize and their queens are dark and hard to find. Thus the two races have contrasting faults and virtues and it seems as if it might be possible to combine the virtues of both in one bee with the elimination of their faults.

The first generation hybrid very nearly does combine the virtues of the two races. The quiet disposition of the Caucasian seems dominant over the excitability of the Italian and the Italian reluctance to sting seems dominant over the prompt stinging tendency of aroused Caucasian. Thus the first generation hybrid is remarkably easy to handle; veil and gloves seem superfluous and the smoker goes out from disuse!

The hybrids are as hardy as or even hardier than the pure Caucasians and build up quickly in the spring. They maintain as large an establishment as the Italians and keep the colony strong into the fall, a desirable trait where there is a probable fall honey flow. Also they are not bad with the propolis. (I should think that some queen-breeder in the South would find a market for Italian queens mated in a Caucasian apiary.)

The first generation hybrid is uniform, but naturally they do not breed true and in the second filial and subsequent generations they show all possible combinations of characteristics according to chance. For example, occasionally the two recessives, the excitability of the Italian and the prompt stinging qualities of the Caucasian, appear combined in one individual. Such bees are the hottest things I have ever handled. They do not fly around in the air, like Italians, but when the propolis pops they shoot out with a sound like the hissing of steam, each bee like a bullet to its mark! They dig in like furies. Every button hole and wrinkle is tested. They sting everything, smoker, hive tool, clothng, and shoes. This combination is not very frequent, I am thankful to say.

The Italian color seems dominant in the workers, but incompletely dominant in the queens, leaving the queen in some cases the same color as the workers and hard to find. They vary all the way from colonies that would pass as pure Italians to colonies that look as much like pure Caucasians.

There are so many conflicting characteristics present that it looks as if it would take a long time to select out a pure strain. After six years I am still a long way from my goal, but I have not given up.

Chicago, Ills.

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APIARY AIDS

The Observer

Build up your honey trade by mail. I know of a beekeeper who has the prices of his honey printed on regular postal cards. Regularly he mails these cards to individuals and business establishments. These cards are good silent salesmen. Those who receive these cards, even though they may not be in the market for honey at the time, will usually lay it aside for future use. Many times this beekeeper has received orders from persons whom he had long since forgotten.

* * * * *

Along with bookkeeping in beekeeping, a small notebook carried in the pocket is a time-and-money saver. For example, when a yard is completed, notes on equipment, etc., needed on future trips are jotted down. The number of colonies in a

yard, weak colonies, etc., are recorded at each trip.

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Although the average beekeeper can make his hive tool substitute for a thousand and one tools on various jobs, a few extra items of hardware are almost essential in the apiary. A small, lightly-built tool box should always accompany the truck to the out-yard. A hammer and assortment of nails to repair broken top-bars, fasten cleats, etc., are a main part of the kit. Other items to be added are, of course, up to the user.

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TO KEEP HIVE RECORDS

Benj. Nielsen

We have tried various methods of keeping written records on the conditions and activities of the hives in our yards. Writing on the outside of the hive is unsightly and sometimes

For handy hive record a shipping tag is thumbtacked to the inner cover of each hive.

confusing, slips of paper in a pocket may be lost, and chances are, one may forget to take the book intended for records, and memory may prove a tricky servant.

To date, we like best the method illustrated in the accompanying picture. It is an inexpensive and easy system to put into use. The shipping tags may be purchased or cut from cardboard. A ten-cent box of thumbtacks may be obtained at most dime or hardware stores. With a thumbtack slipped into place it takes but a second to attach the tag to the inner cover of each hive. Such a record is always at hand, protected from the weather and no matter in what position one is standing by the hive, a mere turn of the wrist will flip the tag into position for writing.

Aurora, Nebr.

Richard D. Barclay

New Jersey has lost an outstanding person in beekeeping in the death of Mr. Richard D. Barclay of Riverton, which occurred suddenly of heart trouble on November 4, at the age of 53.

Mr. Barclay early became interested in bees and secured his first colony when eleven years old. Apparently his interest in bees was maintained for after his graduation

Richard D. Barclay.

from State College, Pa., he lectured on bees at farmer's institutes, his principal theme being bees for pollination.

About 1912 he first took up commercial pollination and from that time until his death increased his number of colonies and renting until his holdings were 870 colonies of which over 500 were annually rented to the growers of peaches, pears, apples, blueberries, and cranberries.

During 1916-1927 Mr. Barclay was president of the New Jersey Beekeepers' Association and since the latter date was the chairman of the Public Relations Committee. He was largely responsible in having research work on bee disease and pollination started at the New Jersey Agricultural Experiment Station. He wrote a correspondence course in beekeeping for Pennsylvania in 1905 which is still being used. He and Dr. Surface were mainly responsible for the organization of the Pennsylvania Beekeepers' Association at Williamsport, Pa. In that connection Dr. Surface writes "Dick did not aspire to

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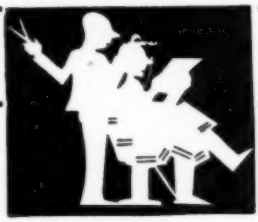
Just News



Dr. Walter B. House, of Saugatuck, Michigan, passed away on November 30. Some of our older readers will remember Dr. House as one who assisted A. I. Root in the early days. He was the first to prepare the second revision of the book, A B C of Bee Culture, revisions of which by E. R. Root have since taken place, bringing the total distribution of the book up to more than three hundred thousand copies, thirty thousand copies of which have been printed in the Russian language. Dr. House was a student in Oberlin College in 1879. He was a beekeeper and while visiting A. I. Root in Medina, Mr. Root employed him to do this special work on the A B C of Bee Culture, as it was then known.

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The Ohio Crop Survey for 1938 conducted by the Ohio Extension Service supplies information which is very basic in carrying on an efficient extension program. In this survey in which over 1000 beekeepers cooperated, information was gathered to show the floral sources furnishing the surplus crop and those supplying winter stores in the various counties of the State. Such data is a valuable guide to the extension specialist in the formulation of an educational program on production and marketing problems. Especially interesting was that of the 20 beekeepers averaging over 175 pounds surplus per colony, seven had been students taking the Ohio Correspondence Course in Bee Culture. Making use of bee journals, bulletins, and correspondence courses are valuable to the beekeeper as means of becoming better informed and of making beekeeping a more profitable venture. Full details may be obtained concerning the free Ohio Correspondence Course in Bee Culture by making request to the Division of Bee Culture, Ohio State University, Columbus, Ohio.—W. E. Dunham, Bee Extension Specialist for Ohio.

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The Second Annual Meeting of the the Delaware State Beekeepers' Association will be held at the Caesar Rodney School, Camden-Wyoming, Delaware, on January 14, 1939. Professor George H. Rea of Cornell will be the guest speaker. He will discuss two topics—"The Use of Bees for Orchard Pollination" and "The Two-Story Hive and Its Possibilities." It is hoped that beekeepers in nearby states will attend the meeting.—L. A. Stearns, Sec.-Treas.

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The Annual Meeting of the Kentucky Beekeepers' Association will be held in connection with the Farm and Home Convention meeting at Lexington during the week of January 23, 1939. Deviating somewhat from the practice of the past two years when the discussions were spread over three half days, the program this year will be held on one day, January 26. Assisting with the program will be Mr. James I. Hambleton, Senior Apiculturist, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, Mr. L. E. Gooch, Nicholasville, President of the Association and members of the staff of the College of Agriculture, University of Kentucky.—W. A. Price, Secretary.

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George C. Lewis, President and Genenal Manager of the G. B. Lewis Co., Watertown, Wis., passed away December 12, following a heart attack at his home.

Mr. Lewis was born in Watertown, Wis., in 1871. He attended St. John's Military Academy, Delafield, Wis., and Knox College, Galesburg, Ill.; was president of his organization for thirty-five years and served for a number of years as a director of the American Honey Institute. He leaves a wife, Mrs. Margaret Nelson Lewis, and a daughter, Mrs. Allen Coker, Alexandria, Tenn.

Mr. Lewis was held in high esteem by friends and business associates. He will be missed greatly, not only as a useful respected citizen but as one of the mainstays and stablilizers of the beekeeping industry.

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Missouri Beekeepers met during Farmers' Week, October 26 to 28, 1938, at the Missouri College of Agriculture and discussed beekeeping problems in the state. The two beekeeping organizations, the Missouri State Beekeepers' Association and the Missouri Apicultural Society, had consolidated earlier in the year. There was a good attendance from all parts of the state. The group voted to begin at once on a vigorous program of building a strong organization in the state. Prof. Paddock, Extension Apiarist

of Iowa State College, was guest speaker. The officers of the beekeeping organization, which is to be known as the Consolidated Missouri State Beekeeping Association, elected at the meeting for the year of 1939 are: President, Leo H. Bradford, Oregon; Vice-Presidents, A. W. Gale, Chillicothe, C. A. Groom, 2909 Carson Road, St. Louis, Gus Kramer, Independence, Charles H. Reynolds, Seneca, J. M. Layman, Popular Bluff, and Doctor O. Crow, Queen City; and George D. Jones, Columbia, Secretary-Treasury.

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A Beekeepers' Conference will be held January 10 to 12 at Agricultural Hall, Room 103, Purdue University, Lafayette, Ind. Some of the speakers are J. E. Starkey, Apiary Inspector of Indiana, Dr. C. L. Farrar, Madison, Wisc., Lee R. Stewart, Newport, Ind., and B. Elwood Montgomery, of Purdue. A cordial invitation is extended to all.

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The Pennsylvania State Beekeepers' meeting will be held January 18 and 19 at the Farm Show Building, Harrisburg. Among the speakers are Wm. M. Glebe, State Apiarist of Pennsylvania, Dr. W. E. Dunham of Ohio State University, E. J. Anderson, State College, Pa., Jas. I. Hambleton, Washington, D. C., Walter Dowd, Mansfield, Pa., Harry W. Beaver, Troy, Pa., and A. J. Keil, Mars, Pa.

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Ohio Beekeepers' Winter Meeting scheduled during Farmers' Week (January 30, 31, February 1 and 2) at the Ohio State Agricultural College, Columbus, is a cooperative effort of the State Beekeepers' Association and the Extension Service. Monday, Tuesday evening and Thursday afternoon will be taken up by the Association's program while Tuesday, Wednesday, and Thursday forenoon will be scheduled as a "Beekeepers' Short Course." Arrangements are being made to secure the following out-of-state speakers: Dr. E. F. Phillips, Dr. C. L. Farrar, G. H. Gale, and Robert Simons, Kroger Baking Company. There will be many other speakers on the program. Subjects receiving emphasis in the program are: U. S. grades for honey, distribution, and merchandising, marketing problems, cooperative marketing as well as other equally important subjects. The banquet is scheduled for the evening of February 1. Dr. Ernest Kohn, Grover Hill, Ohio, has promised to serve as toastmaster. Plenty of good fun has been scheduled for the banquet.

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The Massachusetts Federation of Beekeepers' Associations, is meeting January 5 in Worcester Auditorium, Worcester, Mass. Beekeeping topics will be discussed by Jas. I. Hambleton, Washington, D. C., Dr. Frank R. Shaw of Massachusetts College, Arnold M. Davis, Amherst, Mass., and Hon. William Casey, Commissioner of Agriculture of Massachusetts. The public is invited.

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The annual winter meeting of the Empire State Honey Producers' Association will be held at Comstock Hall, Cornell University, Ithaca, N. Y., during Farm and Home Week for a three-day meeting, February 14, 15, and 16, 1939.

Tuesday, February 14

Registration begins 8:30 a. m.

9:00 a. m. Opening session, reports and continued registration.

10:00 a. m. Discussion of problems of colony management, led by E. F. Phillips.

11:00 a. m. Above discussion continued.

11:30 a. m. Progress in Extension Work in Beekeeping, George H. Rea.

Question Box

3:30 p. m. Discussion of the Future Marketing of Buckwheat Honey.

Wednesday, February 15

9:00 a. m. Discussion and demonstration of the Viscosity of Honey—William L. Coggshall, Ithaca.

10:00 a. m. Discussion and demonstration on the Water Absorption Power of Honey, E. C. Martin, Guelph, Ontario, Canada.

11:00 a. m. Discussion and demonstration on the Effect of Heating Honey in the Honey House, E. F. Phillips.

Question Box

3:30 p. m. Discussion on the Central Apiary Plant.

6:00 p. m. Dinner at Bethel Grove Community Center, east of Ithaca.

Thursday, February 16

9:00 Current Apiary Inspection, A. C. Gould, Albany, N. Y.

10:00 a. m. The Fermentation Problem in Honey, E. J. Dyce, Guelph, Ontario, Canada.

11:00 Long Distance Beekeeping Management, Burel H. Lane, Trumansburg, N. Y.

Election of officers and final business session.—E. T. Cary, Secretary, Empire State Honey Producers' Ass'n.

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The program for the annual meeting of the New Jersey Beekeepers' Association which will be held in Trenton, N. J. on January 26, 1939, follows:

9:30 A. M.

Report of Secretary-Treasurer, E. G. Carr, Pennington: Report of Standing Committees:

(a) Research, G. Fred Jordy, Chm. Flemington

(b) Membership, P. L. Holcombe, Chm. Lambertville.

(c) Publicity, E. G. Carr, Chm. Pennington.

"Migratory Beekeeping in New Jersey"; Frank Fekel, R. D. Vineland.

Henry Brown, Cape May Court House.

"Ground Rent for Out-yards". Milton Stricker, Mgr., Barclay Apiaries.

1:30 P. M.

"Cut Comb Honey". A. J. Hausenbauer, Hopewell.

Clarence Kautz, R. D. Paterson.

"Colony Morale". Dr. E. F. Phillips, Ithaca, N. Y.

6:30 P. M. Dinner, Y. W. C. A.

Dr. Phillips will speak on "The Price of Peace". **Details regarding the dinner at the morning session.—E. G. Carr, Sec.-Treas.**

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Editorials

Why Package Bees The package bee business has now grown to enormous proportions. It solves the problem of complete or partial winter losses in the North; it enables the beekeeper to build up his weak colonies into those that will produce a crop; it saves, in the very cold climates, the expense of wintering. The beekeepers in extremely cold climates are depending more and more upon package bees, which are released on combs of good honey and pollen as soon as weather conditions will permit.

Approximately half a million pounds of bees in package form are moving from the South to the North, mainly by railway express. However, many of the extensive beekeepers are going after their own bees with large trucks, arriving in the South where they are loaded late in the afternoon and evening. The bees are gorged with sugar syrup and then started on the road, traveling night and day until they reach their destination. This requires two drivers, one driving while the other sleeps.

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Honey Dip for Ice Cream If you wish to know what is really delicious, take a good grade of table honey and drizzle or pour it slowly over the surface of a dish of ice cream. The honey will congeal, that it, its viscosity will increase, so that the honey becomes waxy, and when this waxy honey and ice cream are eaten together, it makes a delicious mouthful. Try it out and see for yourself. When you have done that, go to the ice cream dispensers in your town and give a demonstration of how honey enhances the palatability of ice cream.

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The Nuisance of Propolis in the South In some of the Southern localities, notably in Southern Florida, propolis, or bee glue, is much more abundant and it is much stickier than it is anywhere in the North. There are apparently many gums which the bees gather in the South which they do not find in the North. This bee glue is deposited between the top-bars, between the frames and in the rabbets. It fastens the honey-boards down, so that in order to move them it is almost necessary to wreck the hive or the honey-boards, themselves.

What is the remedy for propolis? It is to use an automobile grease, or grease of any kind over those parts of the frames and hive rabbets that come in contact.

Mr. James Heddon of Michigan in his book published in 1885, explained that the propolis nuisance could be overcome entirely by the use of grease. Any automobile grease will do the work, provided it does not smell too strongly of crude oil and kerosene.

Some have recommended dipping the frame parts in hot paraffin before assembling. These paragraphs were suggested by an article by J. F. Dunn in our December issue, page 759.

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The Two-queen System of Honey Production Some forty years ago, the idea of using the brood and bees of two queens for the production of either comb or extracted honey, was discussed not a little. The plan at that time was to use a queen excluder, placing the same between two hive bodies each with a full compliment of combs and each with a queen. It was believed that the queen excluder would keep the queens apart, and that the bees would circulate back and forth and tolerate the two queens. But, in most cases, those who tried this system were doomed to disappointment. Queens would fight on each side of the excluder, with the result that one would use her sting at the right time and kill her opponent. An attempt was then made to use two excluders, so that the queens could not possibly reach each other. Again the scheme failed, because the bees seemed to take a hand and would kill off one of the queens.

During the last two or three years, the question of the two-queen or multiple-queen plan of producing honey has come up again. It has been tested out quite extensively with apparent success in various

parts of the United States, including the Government laboratory at Laramie, Wyoming, by Dr. C. L. Farrar in 1936 (see Gleanings for October of that year), and by C. H. Gilbert, of the Wyoming Experiment Station (see Gleanings for July, 1938). Work has been done in California by Dr. J. E. Eckert of the University of California, Davis, California (see Gleanings for March, 1937). Ralph Benton, Editor of "Bees and Honey," and later of "Frontier Bees and Honey", has been trying out the multiple-queen system for several years. For his latest work, see October and November "Frontier Bees and Honey" of 1938.

This is briefly the bibliography as it leads up to the work done by Dr. W. E. Dunham of Ohio State University. See his article in this issue on page 11.

The primary difference between the old and new methods of working two or more queens to the colony is that in the latter the queens and their bees each have a separate entrance; the bees can not mingle in the two colonies. Dr. Dunham has worked out a plan of using double-wire screen, as will be noticed. He keeps the queens absolutely apart, until the beginning of the main honey flow when it is time to take one of them away, after having raised two families of bees from the two queens. The two families are then gradually united, when we have an enormous colony of bees. The purpose of the wire screen is to allow the cluster heat to permeate the two colonies as well as to keep the queens apart.

Doubtless the question of having two or more queens in a single colony will be up this coming year. Dr. Dunham has opened the subject, and our columns are now open for further discussion.

It is apparent to the senior editor that there is one objection. Such an enormous force of bees under one roof will mean a sky-scraper hive that can be handled only from the top of a step ladder. These colonies will be so tall, that it may be necessary to prop them with rails to prevent their being blown over or knocked over by animals.

It is generally believed that a powerful colony of a hundred thousand or more bees will gather proportionately much more honey than a colony of half that strength. The wish is often father to the thought,—that is to say, we would like to believe that a hundred thousand or more bees will gather proportionately more honey than a population of fifty thousand. Is that true? A general discussion by those who have tried out the proposition will throw light on the whole matter.

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The New Orthodoxy on Wintering Forty or fifty years ago it was considered vitally necessary to feed bees on sugar syrup only, taking away all good combs of honey, and certainly all combs containing pollen, for pollen, it was believed, was the prime cause of dysentery. Too much nitrogenous food, it was claimed, clogged the intestinal tract of the bees, resulting in purging that killed off whole colonies.

Twenty or thirty years ago, it was considered impossible to get too much packing around bees. From six to eight inches was considered necessary. Now it has been discovered that an excess of packing becomes an ice house that keeps the cold in when it is warm enough out of doors for bees to fly.

The tables have turned. Natural food in the form of well-ripened honey is now regarded as far superior to sugar syrup. The presence of plenty of pollen in the combs is also important.

In the last few years top entrances have come forward. Why? To relieve the excess moisture where the cluster is supposed to be located, and at the same time prevent suffocation of the colony when the bottom entrance becomes clogged with dead bees, ice, or snow.

Furthermore, it is now pretty well proven that too much packing sometimes does more harm than good, because it does not allow the warmth of the sun on bright days during winter to penetrate to the cluster so that the bees can expand the cluster and re-form again where there is more food.

The American Bee Journal, editorially, on page 493 of the November issue, has pretty well explained the new orthodoxy of wintering, and here it is:

> Only a few years ago authorities advised the use of heavy packing cases with several inches of insulating material which put the bees virtually into cold storage. The winter cases were not only bulky and expensive but unsatisfactory in results.
>
> It is rather surprising to find that bees are now wintered successfully out-of-doors

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with but little protection on the bleak prairies of the northern plains. With a top entrance, plenty of stores, and protection from wind there is but little complaint of winter loss.

Apparently the condensation of moisture offers the one obstacle which the bees are not able to meet. With proper provision to keep them dry they are able to stand much cold with little apparent ill effect. In the days when bees were commonly wintered in single-story Langstroth hives, there was much loss from the consumption of stores to the top-bar when it was too cold for them to move over to adjoining supplies. With plenty of honey above the cluster this difficulty does not appear.

Protection from wind is very important and the location of the winter apiary site in a sheltered position helps more than extra packing.

It may be said also that the use of the food chamber hive quite generally throughout the country has resulted in very populous colonies for winter and such colonies are likely to winter better than less populous colonies.

Furthermore, two-story, or food-chamber colonies contain more pollen than single-story colonies, and such colonies can begin brood rearing early in order to produce an abundance of bees to take full advantage of the honey flows throughout the season.

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The Institute Goes On It is certainly a satisfaction to know that the American Honey Institute which has served beekeepers so well during the past decade, is to continue. See page 46 for details.

The demand for honey is the very foundation of our industry. To increase this demand people must be told about the merits of honey and the many ways in which it can be used.

If ever we needed the Institute it is right now. A part of the Institute's job is to contact the public, especially people connected with organizations that handle foods, to induce them to give honey, nature's oldest and choicest sweet, the recognition it rightfully deserves. The producer and consumer of honey need a "go-between" such as the Institute.

Many beekeepers during the past few years have attributed their increased honey sales directly to the splendid work being done by the Institute. Just imagine the far-reaching effects of publicity given honey by Gold Medal Flour a few years ago when they spent $250,000 advertising a Christmas cake containing honey, or, of the Kellogg Company with the word **honey** appearing on millions of packages containing breakfast foods. The contacts with these organizations, which resulted in the use and advertising of honey, were made by members of The American Honey Institute staff, and in one instance it required twenty-two letters and interviews to get results.

The Institute isn't a begging organization but it does need money and must have it to carry on. Just think of what the Institute could do in popularizing honey if all beekeepers would give even one dollar for each ton produced. It is reasonable to assume that 180,000,000 pounds of honey were produced in this country in 1938. If it were possible to secure $1.00 for each ton this would amount to $90,000.

The American Honey Institute is our industry's best friend. Let's get behind it.

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Our Industry and Its Needs Most of us are so busy that we do not get a bird'seye view of our industry and its needs. To do this we must take some time out, then stand back a little, to view it from the proper perspective.

We usually think of our industry in terms of producing and selling honey. This is an important phase, especially to the beekeeper. However, it is reasonable to assume that nectar was created primarily to attract insects, thus bringing about the distribution of pollen in blossoms. Bees are said to be at least ten times more valuable as pollinators than they are as honey gatherers.

There are many possibilities of developing new uses for the products of the hive—honey, wax, and propolis. Bee venom for arthritis is a comparatively recent development. Some marvelous results are being attained. Again experimental work is being done in using royal jelly (bee larval food) as one of the ingredients of a tonic for undernourished children. This works apparently and has some promise.

Our industry is in dire need of more cooperation and coordination of effort, especially in merchandising honey. As Harold J. Clay said at the New Orleans meeting, "We need a Moses to lead us out of the wilderness."

From North, East, West and South

NORTHERN CALIFORNIA, Dec. 5.

Weather: It is winter in California. It is winter after our first rain comes. The rain has come and as far as beekeepers are concerned they are well satisfied, for the rainfall thus far is about normal. This is the condition here in the Bay Region. Some places farther north have not had enough rain and in other places they tell us they have had too much. Then there are the mountain regions where they are having plenty of snow. It is only where the snow covers the hives in California that bees do not fly every day. Today, the bees here are busy carrying in pollen.

Crop Prospects: It is difficult at this time to make any calculations as to what the crop of 1939 will be. It is a rest period for beekeepers. Most of the bees in the northern part of the state have been put into winter quarters with young queens, plenty of honey and plenty of bees. This is almost a sure guarantee that they will come out in good condition in the spring. The eucalyptus crop was so heavy the past year that we cannot expect as large a crop this coming season. This is our natural way of reasoning but the way trees are budding some of us may miss on our calculation. Quite a number of colonies have been moved into the district.

Miscellaneous: The forty-ninth convention of our State Association has come and gone and Santa Barbara did herself proud in the hearty welcome she gave to those who were present to enjoy the warm friendship of their fellow craftsmen and to profit by the exchange of experiences and instruction in a wide range of subjects. Three important subjects appeared on the program for discussion. First, the question of freight rates on honey in less than carload lots. A committee of five members was appointed and instructed by the convention to request the State Railway Commission to place honey on the list with other agricultural products and to request a rate of fifth class, instead of the present third class. This change would save the beekeepers of the state thousands of dollars annually and would tend to improve the present depressed market on honey.

The second item of importance was in the form of a resolution instructing the Association to urge the Surplus Commodities Corporation to purchase the surplus stocks of honey now in the hands of producers in California for distribution to the unemployed, thus improving the marketing problem of the entire country.

Third, the honey exhibit at the Golden Gate Exposition—this to be the finest exhibit ever made.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, Dec. 4.

Weather: Cool nights and balmy days are the rule and so far as weather is concerned it is all that any one could ask for. Only a few nights cold enough to nip the tomatoes, and vegetables and cause smudging in a few citrus sections.

Prospects: Prospects for 1939 are all in the "air" in-so-far as encouragement from weather conditions are concerned. No rain has fallen this fall over our beeranges in Southern California and vegetation is certainly dry. Forest fires have burned over ten to fifteen thousand acres. Much of this is good bee-pasture that will take many years before it will again be of any use to the beekeeper. Especially is this true of the black sage ranges as it is one of the slowest to reestablish itself. Fire not only destroys the bush and roots of the black sage but the seeds that have been scattered as well. Some of the honey-producing plants like the white sage can stand having the tops burned off and the roots will send up new growth and soon be again producing nectar.

Market: The honey crop is all in the cans and such as has not already gone to market is all ready to go. Prices are not all that we would desire but the honey will keep and so long as we have it on hand the banker has no worries. There is little if any change in prices quoted by the buyers since our last letter so far as we can learn. They seem to be able to get enough to fill orders and few buyers are willing to stock up to any considerable extent.

Miscellaneous: A Merry Christmas and a Happy New Year. We have heard those words before, but the beauty of it is they never grow old and we are always glad to hear them.

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Bees are going into winter with plenty of stores and young bees. Especially is this true in the larger apiaries. "Sixty pounds on the back end of the hive is about right," as one beekeeper told us last week. We have found that it takes just as much honey to winter a colony well in Southern California and have them ready for the harvest as it does in the colder countries. Most of the surplus supers are off the hives and the bees have the covers sealed down ready for winter. We have ours stacked in the yard with a queen excluder underneath and a hive cover on top—stacks of eight supers each with a two-inch space between stacks. Never have any loss from moths as they do not like to work in the light.

Some few apiaries are being offered for sale. This is nothing out of the ordinary course of events. High prices always encourage people to invest and all too often they invest in things that they know nothing about. Beekeeping is no exception and some of these apiaries were bought during and just after the war when prices on everything were very high. The fellow who starts with a few colonies and gradually works up until he has enough to occupy all of his time becomes the successful and satisfied beekeeper.—L. L. Andrews, Corona, Calif.

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TEXAS, December 1.

Weather: November was featureless so far as beekeeping is concerned. The drouth of the last half of the year has continued throughout Texas. The drouth has been such that there was no honey flow of consequence throughout the beekeeping sections of the state. The bees spent their time in making preparations for the winter cluster. The lack of fall flowers and consequently nectar and new pollen brought brood rearing to an end at an earlier date than usual. Due to the same drouth the amount of stores used since the end of the regular honey flow was much larger than usual. There are, however, sufficient stores in most of the yards from which reports have been received to carry the bees through in good shape. Numbers of beekeepers had planned to move apiaries to the Edwards Plateau to pick up fall stores from evergreen sumac, white brush, and broomweed. Several of them were badly disappointed when after moving the lack of rainfall did not allow these plants to bloom.

Miscellaneous: In much of Texas rain must fall during December or the chance for a spring honey crop is meager. As yet no seedlings of horsemint or the other spring nectar producers have appeared. The present situation compared with the long-time prospect average makes a spring honey crop problematical. Two very encouraging tendencies are evident. The first is a slow but ever increasing demand for honey. This is due to many causes. One which is seldom called to the attention is the better distribution of honey throughout the United States which makes honey not a seasonal commodity but a staple article on the shelves of grocers. It is to be remembered that one of the problems largely discussed only a few years ago was how to stabilize the honey market so that honey would be on the shelves throughout the year. Ease of transportation has solved this problem. While many believe that it has decreased the price of honey it certainly has increased the total amount of sales. The second tendency is that beekeeping is attracting the support of persons of means who are going into beekeeping not as a livelihood but as a recreation. Many of these are planning on maintaining quite large apiaries. They do not expect to produce honey for sale and the honey which they will distribute will be to parties who would not buy, and to benevolent institutions. It is these interested people who have made it possible for school teachers to use the honeybee as an object of instruction. In many cities the honeybee, its history, and example, are used to good effect in even as low as the third grade. If one has a desire for information it is surprising how many school room projects, investigational reports, master's, and doctor's theses relative to honeybees occur in the list of the activities of our educational institutions.—H. B. Parks, San Antonio, Texas.

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COLORADO, December 9.

Weather: The killing frost came much later than usual, which, with other favorable factors, permitted the bees in some sections to gather honey and pollen late in October. This was used mostly for rearing more bees for the winter cluster. November, however, with its snows which were general, brought the temperatures scurrying down to around the zero mark and below, reminding us that the seasonal change once again was here, calling out its warning. December, up to this date, has been very moderate and pleasing with the bees flying every day, giving us another chance to visit out-

yards to finish undone work and give the final touch. With the exception of a few less favorable places where feeding has been necessary, the colonies as a rule are well supplied with bees and honey to carry them into the winter.

Honey Crop: The honey crop in general was spotted. The western slope reports a 50 to 75 per cent crop, while the northern part of the state had a much needed flow to make up in part for the number of barren years of the past. San Luis Valley and south-eastern Colorado received fair crops. The flow in San Luis Valley, however, was cut short by a heavy frost that occurred in August and affected all plants including the hardy alfalfa and sweet clover. Sunflowers were killed outright and no honey was stored from this source. A farmer was heard rejoicing over the prospects that the seeds from this weed also would be frozen so as not to germinate.

Miscellaneous: The demand for honey is about on an equal par with that of a year ago, but the price tendency is somewhat lower. Some lots of fine quality water white honey has been sold to grocers here in Pueblo as low as 35 cents per five pound pail. This is bound to react on the prices in general and also react on the seller of the 35-cent pails when on his return to sell more he finds that the shelves are well stocked with honey that some one else supplied—for 35 cents. But, why be pessimistic when we should be optimistic? Let us all look forward to "a Honey" of a New Year.—G. A. Pauli, Pueblo, Colo.

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MONTANA, December 1.

Weather: Our fall has been ideal for bees. October was very nice. November was colder. We had an abundance of rain, and snow has piled up deeper than usual in the mountains for this time of year.

Crop: We had a very short honey flow. Most of the crop was made between July 4th and 25th. The reports around here have been about one-third below last year. There were a good many bees that never did get into shape.

Price: The honey market has been a quarter of a cent lower than last year. This is by the truckload. The market has been very good with the stores. Some of the packers are reporting the same prices as last year, but this may be in small orders. Most of the producers have either delivered their honey or contracted for later delivery. Anyway it should all move soon as a much larger crop was cleaned up by this time last year.

Miscellaneous: Spring was very late this year with cold winds, and bees were very short on feed. Many colonies played out from one cause or another, forcing us to purchase many packages of bees with and without queens.

There were more colonies minus queens and with laying workers than usual. Our package bees have built up very slow the last two years and often a third of the bees would be dead by the time they reached us. I had one shipment two years ago of 30 colonies and there were 8 queens dead on reaching here. Others that had to be helped out of the cages soon disappeared. The express company made good some of the loss. Many queens were never made good by the shippers.

We had a nice bloom of sweet clover and alfalfa here the last year. This was the latest bloom I ever saw. It stayed in bloom till the first of November. If the bees made any extra honey from this the bees probably used it up as there has been lots of feeding to do. But I believe it will leave nice bees in the hives to begin winter.

The beemen have been packing their bees for the last two months, and very few bees will stay out during the winter. Live stock has damaged paper packing in a few cases that may necessitate going over some of the bees again.— Parson Pile, Corvallis, Montana.

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VANCOUVER ISLAND, December 8

Weather: The long dry summer lasted well on to the end of September. October gave us a few short wet spells with brilliant days in between, but the blue skies and sunshine far outnumbered the others. We naturally were a bit pessimistic about November, but it passed with flying colors and we are now in December. Of course all this is grand for flying bees as it extends the brood nest considerably so a generous supply of good stores is essential to keep up with the demand, and strong young colonies should be all ready for work in the spring.

Miscellaneous: The past season has been somewhat unusual. We hoped for great things in the spring, but cold weather prevailed until quite late and maple and fruit bloom could not be done full justice to.

When summer weather did decide to stay bees had to make up deficiencies in stores but they got well ahead in June and wonderful weather prevailed. But, and a big but, there was no moisture day or night and the nectar sources literally dried up. Fire hazards were high and this culminated in the biggest fire

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we have ever had on the Island at Campbell River. Smoke did the rest. The better beekeepers in that district report a seventy-five pound average which is much below usual, and the same in the fireweed areas at Cowichan Lake where 150 pounds is looked for. The districts nearer Victoria were considerably less owing to dried up conditions.

A large number of new beekeepers started up this year. As is often the case they wanted to see tangible results and sold their honey at once, somewhat reducing the market for the "regulars", who refuse to lower their prices knowing there is only a small margin after all working expenses are paid. But we must all live and learn and even these amateurs will soon find they are selling at a loss.

What we need now is rain, rain, and more rain to get the ground well soaked for clover growth before frost comes, as well as to augment the water supply which is alarmingly low at up-Island communities at the present time.

Water, water everywhere, (meaning the sea) and not a drop to drink.—Florence A. Greenwood, Duncan, B. C.

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SOUTH DAKOTA, December 6.

Weather: Time unfolds like a roll of script, and each chapter is good or bad according to the word inscribed for weather. Like the summer, the fall has been a little too dry over most of our beekeeping areas. Now an inch of snow adds the first definite touch of winter to a fall which was unusual for its continued mild temperatures. Generally the honey flow came to an untimely end about August 1. Late in the month scattered rains revived vegetation, and it was a strange sight to see clover stubble, previously pastured or cut for hay, shooting blossoms on leafless stems. It yielded moderately and colonies continued rearing brood and packing chambers. I observed bees gathering nectar October 9, three weeks to a month later than we usually expect.

Market: Retail prices are steady and holding well with last year although more producers than usual are packing and selling their own crop. To the credit of S. D. beekeepers it can be said they are not inclined to price cutting and also are most critical of the type of honey package they offer the consumer. The only awkward pack I've seen is one brought in from an adjoining state. It was even unlabeled, but the grocer said he bought it cheap enough so he could do that himself. However, there is a great variation in price between the large and small town, which the storekeepers are undoubtedly responsible for. For instance, five-pound pails have been retailing in one city for as low as 37 cents, while in small towns they are commonly priced at 59 cents.

As to the future of the honey marketing problem I'm at a loss for an opinion. The big packers have at their disposal the most efficient means of distribution, but the fact remains that they are not offering enough to allow the average producer a profit—and it's profit that beekeepers, also others, must live on. You can't live on the gross—not very long.

Miscellaneous: It is encouraging to note the stand taken against capping-melter honey. The capping melter works to the disadvantage of the entire industry whether you use them or not for after the honey is packed in tin there is no way for the purchaser to distinguish one lot from another. It seems to me we have trouble enough holding down color and retaining flavor during liquefying and processing without having to dump in colored melter honey during extracting.

Top Entrances: According to the journals there seems to be various ways of effecting a top entrance, but so far as we here are concerned there is only one top entrance—in the top—through the escape hole in the inner cover which is the geometrical center. The cluster is always closest to this point, part of it usually extending into it where a few bees can regulate the temperature and ventilation by simply moving their wings or lying still. At this point they are in complete control of the hive's air conditioning system. In extremely cold weather Nature steps in to aid the cluster by frosting over the outer exit, thus sealing the hive completely. Auger holes in sides of hives are not top entrances, they are a mutilation of good equipment, and improperly located for control by the cluster.—J. F. Norgren, Junius, So. Dak.

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OHIO, December 11.

Weather: Ohio has been favored with some fine fall weather and the bees have taken advantage of it in many ways. Winter stores in the way of honey and pollen are as good if not better than they have been in many years. This I believe is pretty general over the entire state; however, there may be a very few exceptions in the east and southeast sections of the state. Very few if any beekeepers have had to do fall feeding

During the Thanksgiving period we had a nice snowfall. In addition we have had considerable rainfall and all of the honey producing plants look extremely promising for the coming spring. While spending many hours afield with gun and dog I could not help but pay special attention to the excellent growth of new clover—sufficient to produce a bumper crop for next year. Winter packing has been a favorite pastime with beekeepers for the past week.

Honey: Many beekeepers have produced a crop far above the average. The honey is of excellent quality and flavor. In certain locations aster produced quite a little surplus in addition to winter stores.

Market: Sales compare favorably with other years but the price is lower. Out-of-town bottlers have been flooding the market here at very low prices and no doubt have done the same thing in other cities. Of course, the beekeeper in some sections is the one who has really lost money. He may have sold his crop to raise ready cash or because he got panicky on account of the size of the crop. Bottlers from all over the United States met in Chicago early in the season and set the price they were going to pay for honey this year. If I am not sadly mistaken this might be interpreted as "price fixing" and there is a federal law against this. But still we keep on dreaming.

Miscellaneous: On page 761 in the December issue of Gleanings I have read—"Marketing Agreement has Teeth in it." This indicates that the beekeepers of the South, who are in the package bee business, have organized and are doing business on a strictly business basis. Citrus fruit growers of both Florida and California and English walnut and pecan growers of the various states have all banded together in the form of co-operatives in their separate lines of business and in so doing they are doing national advertising in order to get rid of their bumper crops and are accomplishing what they have endeavored to do in a successful way. Now let us make a mental picture of the honey producing beekeepers. The negative is pretty much blurred making us look somewhat overexposed, indisposed, disgruntled, discouraged, and with a slight attack of indigestion. WHY? The answer is lack of organization. We are about the only class of people in the United States which is living under dictatorship. When we come to buy supplies, the price is dictated. When we look forward to a good crop of honey the weatherman dictates whether we shall have it or not. When we come to buy package bees the Southern beekeepers dictate the price we shall pay for them. When supplies and new bees are received the transportation companies dictate exactly what we shall pay for transportation. When the crop is harvested the saddest scene in the entire play is enacted and we are face to face with another dictator—the price fixer. We end the year just about where we started insofar as finances are concerned. We are the COAT of the coat and vest. It is claimed that the cost gets all the wear and the vest gets all the gravy.

It will be the humble duty of the honey producing beekeepers to live in a free country under the dictatorship of a few until such a time as we can band together in a co-operative manner the 800,000 beekeepers of the good old United States and at least have the privilege of dictating what we should have for our honey.

The new uses of honey in the many various ways which are being published in many magazines is a fine thing for the price fixer but avails but little to the beekeeper unless he can have a voice in the price he shall receive for his product.

There will be much discussion on this matter at the annual winter meeting of the Ohio Beekeepers' Association, January 31 to February 2. Pack up your troubles in your old kit bag and be on hand. Don't leave it up to the other fellow. Take part in it.—W. A. Coulter, Columbus, Ohio.

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MINNESOTA, December 9.

Weather: November was unusually mild with very little precipitation. There has been some snow in the North, but not enough yet to add much to the soil moisture. The southern part of the state is well supplied with soil moisture and honey plants are in excellent condition, but much of the northern part of the state is very dry.

Honey Crop: Final reports indicate that the 1939 crop was a little below normal instead of the bumper crop that was expected in the early part of the season. Conditions were spotted, and some sections obtained a good yield, while others fell far short of normal.

Market: Honey has been moving fairly well, but has probably been held back some by the great difference in prices. Some beekeepers apparently became discouraged and sold honey in retail packages at less than wholesale prices. The

quality of the crop is unusually good.

Miscellaneous: At the annual convention of the Minnesota Beekeepers' Association, the following officers were elected for the coming year: President, Frank Rojina, Excelsior; First Vice-President, Everard Flygare, South Haven; Second Vice President, George Gessner, Forest Lake; Secretary-Treasurer, N. J. Ellingson, Northfield; Members of the Board of Directors, C. D. Hollister, Roseau, and Earl Patten, Medford.

The convention gave a strong endorsement of Professor A. G. Ruggles, State Entomologist, and his staff in their fight against American foulbrood, and took steps to try to secure more funds for this work for the future.

A short course in beekeeping will be given at the University of Minnesota during Farmers' and Homemakers' Week, January 16-20 inclusive. The course is given primarily for beginners and those who have had but a few years' experience.—M. C. Tanquary, Fargo, Minn.

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WISCONSIN, December 7.

Weather: Wisconsin weather has been ideal for wintering. Last fall was mild but not warm enough to cause the bees to be overactive. We have no reports of excessive broodrearing and the bees seem to be strong with good weight. Pollen stores are not sufficient. Only a few colonies examined on a tour of the state this fall had a good supply of pollen. Most of them had little or none at all. This lack of pollen undoubtedly will prevent early broodrearing next spring and if the weather is unfavorable for gathering pollen, there may be a great deal of spring dwindling.

Honey Crop: Beekeepers in the eastern and southern part of the State report crops this season ranging from fair to good. In the northwestern section, the crop was poor, with many beekeepers reporting no surplus honey.

Market: With early reports of a large crop in other states, some honey sold at 4c and 4½c. Beekeepers who held their crop are selling now at a better price. One beekeeper reports that he "gave" his honey away for 15c a pound.

Prospects for Next Season: Moisture precipitation last summer and fall was ideal for extensive plant foliage. White clover is abundant and seems to be in excellent condition for a nectar flow next season.—H. F. Wilson, Madison, Wisconsin.

GEORGIA, December 5.

Honey Crop: Owing to very favorable weather during the latter part of April, all of May and first part of June, Georgia made her greatest honey crop; also the quality was much better. The Mexican clover honey flow was badly weakened by a long drouth through the upper Coastal Plain regions where it grows most prolific, but some surplus, ranging from one to three supers was made from this source alone. Since the days of forest protection several notable honey secreting weeds have put in their appearance in sufficient quantities and prolificness to assure some surplus. The new weed, or latest arrival, is what is commonly called, "broomweed", which yielded considerable surplus around and about the Dismal Swamp. The honey, when fresh, looked as if congealed, but has continued in the same state without any further change. This is a new honey and a new honey plant and our beekeepers are considerably interested.

Miscellaneous: Our bee shippers and queen rearers had a slump in business during the latter part of the season, and they had to give more or less attention to honey production. This saved some, as they had a large amount of surplus honey to sell. This has given encouragement toward more honey production as a safeguard or prop to the package and queen business.

The meeting of the Georgia and Florida State Beekeepers' Associations held in Valdosta proved to be one of the greatest meetings either of the states has ever had.

Activity among beekeepers is rather on the decline, save cleaning up yards against fire, placing hives on new stands, repairing all decayed parts of hives and covers and bottoms; rendering beeswax, and selling the remainder of the honey crop, which is not very much except with the large producers who have customers that they have to keep supplied with honey the year around. Then, too, there is much talk of increasing, and some beekeepers are placing orders for extra supplies for this purpose. Naturally this is the outcome of the good season, more bees and better bees; and speeding up production seems to be the theme since prices are going down, and may go lower, which seems to be the only way out.—J. J. Wilder, Waycross, Ga.

ONTARIO, December 7.

Weather: Another month of very fine weather with temperatures much above the average has passed. When I say that farmers in our locality have been plowing for the last three days, it will give readers a fair idea as to the brand of December weather we are having.

Colony Condition: During the first ten days of November the bees carried some pollen each day and in my notes for December I wondered if brood rearing might be started by this unusual happening, and as a consequence, stores be used up faster than usual. At the Convention a well-known commercial beekeeper of Ontario stated that during this mild November spell they had examined about a dozen colonies and found brood in all stages in every one. Not a good omen for wintering, but as we cannot change matters by worrying about it, we will just hope for the best. A number of our colonies could not be rearing brood as they had no comb but unfortunately not all of our colonies are in this condition in way of empty comb space for bees to cluster on.

Once this was thought to be an absolute necessity but very few hold to that opinion now. When feeding in October of this year we remembered that a very strong colony at one apiary had starved early last spring. As this colony was in a single-body 8-frame Langstroth hive, they were fed all they would take at that time. Two weeks ago while at that apiary this colony was given two ten-pound pails of syrup again just to see what they would do with it and how much they could store in the combs at this late date. Yesterday, Dec. 6, we found both pails about half empty. They were removed and packing carefully replaced over space that had been occupied by pails. This colony must surely be solid with stores at this late date. Many no doubt will ask, will they die? Personally, I wish every colony was just in that shape and I would not lose any sleep over winter losses, buying packages for replacement of dead colonies, etc.

Market: Honey sales are slow and when the cheap prices of apples and other fruits offered in abundance at present is taken into account, hardly anything else could be expected. But apples, etc., are perishable and good honey is not in that class, so our turn will come later. The amazing progress made by Manitoba during the past fifteen years in the way of increasing honey production, so vividly portrayed by Mr. Floyd in December Gleanings, is fully appreciated by commercial beekeepers here in Ontario who at one time actually thought that the West was a permanent market for honey. The writer of these notes confesses that he was among these beekeepers. At the same time we want to say most emphatically that, while we miss the market, we do rejoice that such progress has been made in the West in honey production, and I have faith enough in our business and in our product to believe that there is room enough for all, no matter what part of Canada is considered.

For years we had shipped a car or more to the West, and then in 1923, just fifteen years ago, the climax was reached. Invited by telephone to meet the grocery managers of a well-known firm, one from Winnipeg and the other from Toronto, we actually sold five carloads of honey in less than ten minutes. Two went to Toronto and three to Winnipeg. That year was our bumper crop as we had sweet clover near most of our 1100 colonies, and we produced over eight cars of white honey. Then came sweet clover from the West and package bees from the South, and what a change! To emphasize this change, let me quote from a letter received from London, England, just a few days ago. "I thought I would like to write and tell you how nicely your honey has turned out. I only wish that the market had been better this year so that you could have got a better price for such nice honey. The trouble is that there seems to be a big crop not only in Ontario but also in Manitoba and we are being offered honey from the latter source at ridiculously low prices." I was naturally pleased to get such a pleasant report from the London purchaser, yet my mind went back with a flash to that sale of five cars of honey fifteen years ago, and now our former marketing center is declared to be one of our keenest competitors in the overseas market.

The annual convention of the Ontario Beekeepers' Association is all a thing of the past again. And what a crowd there was present!! At different times the large room used for the meeting was filled and about as many more were visiting and chatting in a room adjacent to the auditorium. During the time of the Convention the Royal Winter Fair was in progress and the honey exhibits at this Show were, in my opinion, the best ever, both as to quality and quantity. —J. L. Byer, Markham, Ontario.

XUM

Heads of Grain from Different Fields

Bees and Snow

For weeks at a time during winter there may be no sign of life in the bee hive, but occasionally the bees will give evidence that they are alive without even breaking cluster. Such evidence is shown in the accompanying picture of a back yard apiary taken after a wet snowfall with temperature only a few degrees below freezing. The round spots on top of the hives show where the snow has been melted by heat of the cluster below, thus indicating the position of the cluster. It will be noted that most of them show the cluster near the front of the hive; two or three are in the middle, none at the back. This may be merely coincidence, or it may mean that bees prefer to cluster near the front of the hive, directly over the entrance. The picture was taken in Virginia, where zero temperatures are unusual and of short duration, the average "cold snap" being from 12 to 15 degrees above zero. The picture gives an idea of what happens when a hive is covered with snow. While more heat is given off at the top than at the sides, there would be enough radiation of heat at the sides and at the entrance to melt the snow close to the hive, thus forming an air pocket around the hive.—Walter H. Hull, Bath, N. C.

Paper for Packing Bees

Referring to my article in December, 1937 Gleanings, page 738, also item page 733, the top we use is Welt's "Rain-Proof" siding paper at $2.00 per roll of 166 feet. It will cover 33 to 41 hives at 4 to 6 cents per hive and can be used over three years. This does not get brittle nor crack up. It is satisfactory and cheap. I trust this may be of help to others who may want a cheap, fool-proof pack.—T. O'B. Clouse.

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A Honey Tea

In celebration of Texas Honey Week beginning October 24, the Ladies' Auxiliary of the Texas Beekeepers' Association had a honey tea in the small auditorium of the Express Publishing Company, San Antonio, Texas, on October 27. Tea and punch sweetened with honey, honey cookies, and sandwiches with a honey filling were served to about seventy-five guests. A small exhibit of various ways to use honey in foods was on display. Through the courtesy of The A. I. Root Company the guests were given honey recipe material. Such affairs as this, to which the public is invited will greatly aid in people becoming more honey-conscious, and so ultimately use more honey.—Mrs. I. F. Aten, Sec.-Treas., Ladies' Auxiliary.

Heat from the cluster of bees has melted the snow on these hive covers, thus indicating the position of the cluster. Most of them are seen to be near the front of the hives, a few in the middle, none at the back side.

New England Hurricane Hard on Bees

The tropical hurricane that hit New England September 21 did considerable damage. Being stationed aboard a coast guard cutter I was not home during the storm, but my wife said she saw one of my hives sailing through the air like a newspaper and it landed in the door yard. I had 8 strong colonies before the storm and it was two weeks after the storm before I could get away from my ship to get home and survey the damage. Well, the folks at home did the best they knew how. They covered the bees and hives with tar paper and this kept out the rain. I found one colony that was tipped over and upside down. The bees had started building comb upright. Another place I found five large colonies all in one large pile. When I started to set this pile up again I was confused as to which hive body and supers belonged on certain stands, but I set them up the best I could. The rain had washed out all the honey that was not sealed and many combs were damaged. In fact, I think I will have to feed some of the colonies to carry them over the winter, although I had planned to take off surplus fall honey. I set up several neighbor's bee hives that were also blown apart by the storm. This storm covering a large area undoubtedly did considerable damage to other apiaries in New England States.—Robert J. Collins, Scotland, Conn.

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Honey Bread and Butter at County Fair

On Saturday afternoon during the county fair a bakery and a creamery united with us to serve bread, butter, and honey to visitors. A large poster stated that all who came would be served free of charge between two and four. As two o'clock drew near people of all ages began to line up at the booth. We soon found that the three who started serving needed extra help although the bread was sliced and the butter had been allowed to soften. These were served from their original wrappers. The line was still long when four o'clock came as many people returned for second and third slices with some children announcing that they had eaten a dozen slices. During about three hours we used sixty loaves of bread, ten pounds of butter, and sixty pounds of honey. Since that day we have had increased honey sales due to a large extent we believe to this effective bit of advertising.—L. R. Goolsbey, Sandpoint, Idaho.

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Merchant of Sweetness

The quality of honey is cool strained,
It droppeth not, but runneth down the side
Into the dish beneath. It is quick heated,
Not in contact with one flake of wax.
Fast cooled, sealed in clean and fine containers,
It is twice blest. It blesseth him that eats
And him that makes. 'Tis tastiest to the tastiest
Becomes a fancy product welcomed thru the town
When honey holds aroma.—Arthur M. Southwick, Waban, Mass.

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Kansas Bees Work Early and Late

The production of some eastern state bee hives are staggering to the Kansas beekeeper, where bees must travel farther between flowers. But this lower production cannot be charged to lack of industry on the part of Kansas bees. I noted the first active bee out on the seventeenth day of March—the last one, I believe, on the second day of November.—Mrs. H. B. Kohr, Wichita, Kansas.

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Cleome

I notice that one of your subscribers asks if anyone has had experience with Cleome. I sowed it in my early days and the bees fairly swarmed on it. It was just one of my many experiments and I did not follow it up.—J. F. Dunn, Ridgeway, Ontario.

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Tobacco Smoke Injures Queens

I have seen queens punished with tobacco smoke by the postoffice authorities which in my opinion is one cause of dead queens in mailing cages. Handlers should be cautioned against this ignorant practice.—Clint Smawley, Cleveland, N. C.

XUM

Asked and Answered

Average per Colony Yield of Honey for U. S. A.

Question.—Are there statistics available giving the average production of honey per colony in this country?—A. L. Downey. Miss.

Answer.—Yes. Since 1928 the U. S. Dept. of Agriculture, Bureau of Agricultural Economics, Washington, D. C., has put out a yearly sheet giving the estimated number of colonies of bees, yield of honey per colony and production of honey by states. The tabulation is compiled from estimates made by men considered among the best informed in their respective states and it is believed that they represent the best effort yet made to obtain such estimates for the entire country. This information has been collected and tabulated by Harold J. Clay of the Bureau of Agricultural Economics, Washington, D. C. This sheet is available for the asking. Due to some slight change in plans and personnel in the Department there appears to be a possibility that this very valuable yearly tabulation of vital information to our industry may not be as complete as in the past. Beekeepers should write to this Department urging the continuance of this service. According to the sheet issued June 1, 1937, containing tabulation for the years 1930-1936 the average per colony yield of honey in the U. S. A. is 35 2/7 pounds.

What Gives Honey Different Colors?

Question.—Is the color in honey due to oil in honey or is it due to particles in the honey gathered by bees from the blossoms?—W. E. Van Horn, New York.

Answer.—The color of honey is usually due to more than one type of constituent, and depends on the floral source from which the honey is obtained, as well as the past history of the honey with respect to age and treatment. The natural color of honey is due to the presence of certain plant pigments, the origin of which is the plant from which the nectar is obtained. Carotin, xanthophyll, and chlorophyll derivatives, as well as other pigments of undetermined origin are found in honey. In certain dark-colored honeys, such as buckwheat, tannin is found present, and is responsible for at least part of the color. The presence of soot or dust particles, as well as the suspended colloidal particles of certain types of honey, also contribute to color. In addition to the above, color is developed in honey on standing (storage), and when heated, due to chemical reactions of the sugars. This may be due to decomposition of the sugars, particularly levulose, (called carmelization) or to reactions taking place between the sugars and certain nitrogenous constituents present in honey (proteins and amino acids) that produce dark-colored substances, called melanoidins.—R. E. Lothrop, Associate Chemist, Carbohydrate Research Division, Washington, D. C.

Devices for Screening Queen and Drones from Package Bees

Question.—I have long been an interested reader of your publication and I have never seen anything very good published on the subject of straining drones and queens from packages. This matter has been taken up from time to time, but never in such a way that the reader could hope to duplicate the results of the author. All of the larger package men have adopted some method of achieving this, but what would be suitable with one system of package production, would be useless with another.—D. T. Winslett, Sacramento, Calif.

Answer.—There are a number of different devices for straining drones and queens out of package bees to be shipped to the North. The basic idea is the use of a queen excluder, which is reenforced by wood bars. Sometimes a regular queen excluder nailed on the bottom of a super is used. The bees are strained through this into a lower hive, and then put into the package, free of queens and drones. Some shippers use a part of a wood-wire queen excluder at the bottom of the funnel used for shaking the bees into the package. We refer you to page 150 of March 1938 Gleanings for a picture of this devise.

Moving Bees Long Distances

Question.—Can you give me any information on moving 200 colonies of bees 1000 miles or more? Although we have been noting from time to time articles in bee journals, etc., relating to migratory beekeeping and moving bees perhaps we still can gain some more information, how they should be prepared, the best time to move, and whether by truck or rail.—Alfred P. Johnson, Illinois.

Answer.—The method to be used would depend largely on the time of the year the moving is done and equipment, such as trucks, available for moving. You doubtless have in mind moving the bees south rather than north. This being the case, a large truck could be used to advantage. In any event the hives should be screened top and bottom, because you would be moving from a relatively cool locality where you live into a region where the temperature would be higher. If you are moving to another location in

the same latitude, at this season of the year, it would be unnecessary to screen the tops. Entrance screening would suffice. Two hundred colonies of bees could be moved in a stock car quite easily. The writer has moved 300 colonies in a stock car a distance of 1200 miles, riding in the car with the bees. The bees were moved from Florida to Ohio. It took five days to make the trip. That was over twenty years ago.

All colonies of bees, when moved in a stock car by rail, should be placed in tiers about a foot and a half or two feet apart, so that air can circulate over the tops of the hives, also that it may be possible to sprinkle water over the wire screens on top. The stagings to support the bees should be built solidly. For long distance shipping, a passageway should be left so that the person who operates the car of bees may pass up and down through the middle of the car to sprinkle water onto the bees, when necessary.

Are Drones Always Fed?

Question.—I have several times seen workers feeding drones the way they feed queens. Is this the usual way the drone gets his food? I suppose they can lick honey out of the comb, but do they eat that way ordinarily, or depend on the workers?—George D. Curtis, Calif.

Answer.—Generally speaking, during the height of the season worker bees feed drones, although drones do feed themselves when necessary. A few years ago we hand-picked 5,000 drones and shipped them in a two-frame nucleus for demonstration purposes. We wondered how the drones would get on without workers to feed them. They did seem to manage in some way to get food. We assume that they were forced to feed themselves, which they can do if necessary.

Late Pollen and Brood Rearing

Question.—Today, Nov. 5, while packing the last of my colonies for winter I noticed some bees going in with pollen. Does that mean that they are rearing brood? The weather has been very warm.—C. B. Waters, Michigan.

Answer.—We, too, noticed bees carrying pollen during the first week in November. Since normal colonies in your locality enter their period of quiescence in November it hardly seems possible that brood rearing would be continued so late in the season. In any event, the cool weather which followed the warm spell would tend to stop any brood rearing which may have been in progress.

Comb Honey Cannot be Manufactured

Question.—Is it possible to make artificial comb honey? Some say that this is possible.—Roger Limer, Roanoke, Virginia.

Answer.—Referring to the oft repeated canard that combs are made of paraffin, filled with glucose and capped over with appropriate machinery, the only thing we can say is that no such thing has even been produced. Some fifty years ago, A. I. Root published in a number of the leading papers of the United States a statement to the effect that he would pay $1000.00 for any reliable information showing that such manufactured comb honey was on the market anywhere. Notwithstanding that this statement was broadcasted over the country for a period of years, no one ever saw fit to take up the offer. In later years, The A. I. Root Company made a like offer, but increased the amount offered to $10,000.00 and was perfectly safe in doing so. Again there was no response to show that such a product ever existed or was on the market. You will find in our book, the A B C and X Y Z of Bee Culture, statements showing how utterly impossible it would be to manufacture such a product. The combs themselves are very delicate; the cell walls are about 3/1000 of an inch in thickness, as thin as paper. If we had dies that could, under pressure stamp out anything that looked like honey comb, out of beeswax or paraffin, they could not clear themselves without tearing the cell walls to pieces when the dies were opened. A further proof is that no two combs on the market are exactly alike. If there were any such thing as manufactured comb honey, it would not be difficult to find two combs that were identical, both in appearance and in the filling of the sections.

Honey for Diabetics

Question.—Is honey better than the ordinary commercial sugars for people suffering from diabetes?—H. F. Ibach, Orange Park, Florida.

Answer.—While we firmly believe that honey is much superior to the artificial sugars such as granulated and brown sugar, or ordinary molasses, for persons suffering from diabetes, we would not recommend honey for use by a diabetic except under the direction of a competent physician, one who thoroughly understands the disease, also the difference in sugars. Honey is an invert sugar and enters the blood stream almost immediately after being eaten, while in the case of granulated sugar, brown sugar, or ordinary molasses, some time elapses before it is ready to be assimilated into the blood stream.

Importing Queens from Europe

Question.—We are interested in securing queen bees from Italy. Just what is the procedure?—F. L. Black, N. C.

Answer.—It will be necessary to place the order with Jas. I. Hambleton, National Research Laboratory, Beltsville, Md. He will forward the order to the shipper. Queens will be received by Mr. Hambleton, then forwarded to you.

XUM

THE NEW ORLEANS MEETING

Jack Deyell

Have any of you readers ever attended a national bee meeting for two or three days, during which time you mingled with beekeepers, also state and federal men from all parts of the country, attended conferences day and night, tried to be present at as many sessions as possible, snatched a few hours sleep each night and then tried to look wide awake and intelligent during the day; and then, after the meeting was over attempted to write a comprehensive report of the meeting? If you have, you know how I feel right now.

When two people attend the same circus, (I'm not comparing the meeting with a circus, although there may be some similarities) each sees and hears different things and receives different impressions from the other. I did receive some very vivid impressions, some of them quite humorous, which I may mention later on.

As I did no' have an opportunity to hear all of the speakers, due to my attending at least three conferences on the side, a detailed report is impossible. Some of the speakers I did not hear were kind enough to hand me copies of their talks which will appear later in Gleanings.

After all, it doesn't make so much difference what John Jones said, but rather, it is the ideas, if any, he brought out, that count. And so I shall try to mention the **High Spots** or **Ideas** gleaned from the meeting.

As I tried to worm my way through the maze of humanity in that Roosevelt Hotel lobby, I was impressed with the fact that members of other organizations are almost as important as beekeepers. At least it was interesting to see members of the Base Ball Leagues of America, meet in convention, talking together in groups, as earnestly and as long as beekeepers.

When I arrived in the bee convention hall, the ball room, and saw groups of beekeepers here and there I began to feel at home. George Bohne, Sec. of the League and W. E. Anderson, State Apiarist of Louisiana, were busy greeting visitors and completing last-minute details of the program. Presently the President of The American Honey Producer's League, W. E. Harrell of Alabama, sounded his gavel and the program was under way. And now for the **High Spots:**

(1) As we looked about and saw beekeepers from many states, also state and federal men from over the country, specialists in their line of work, we were once more brought to a realization of the fact that this beekeeping industry of ours is a very important branch of agriculture.

Horticulture Must Have Bees

(2) Some of the speakers emphasized the fact that Agriculture cannot possibly get on without bees to pollinate the blossoms of fruit, vegetables and various legumes. Bees are at least ten times more valuable as pollinators than they are as honey gatherers. **Growers of fruits,** certain kinds of **vegetables** and **clovers must have bees** nearby when blossoms open, **to bring about pollination** to insure maximum yields. In some areas there is a shortage of honeybees, notably in New York state where at least 50% of orchards are not properly pollinated.

(3) Both L. C. Dadant of American Bee Journal and E. G. LeStourgeon of Beekeeper's Item mentioned the ever-changing flora over the country and its effect on beekeeping. An abundance of honey plants is one of the important factors in securing good honey crops.

The tupelo trees so abundant in the Southwest and so valuable for nectar are fast disappearing and it will be necessary to find some substitutes. Beekeepers should cooperate with the Department of Agriculture in selecting trees, shrubs and plants that secrete nectar, for beautification purposes.

In the North beekeepers are faced with a similar problem. Sweet clovers in some states are giving away to alfalfa and other legumes used in crop rotation. New clovers are being tried. Alfa and Melina sweet clovers, also Zofka, a cross between red and alsike have some promise.

Honey Marketing the Big Problem

(4) **Harold J. Clay** of Bureau of Agricultural Economics, Washington, D. C., who spoke on, "Disposing of the Surplus Honey Crop" gave us some food for thought.

(a) There is no great surplus of honey, in fact the crop is smaller than early reports indicated.

(b) Distress sales usually set prices, which is unfortunate.

(c) Local sales could have been developed more extensively.

(d) Central organization, like American Honey Institute, could function effectively by listing names of buyers in areas of deficiency and names of sellers in areas of abundance.

(e) Other industries like peanut growers and dairies have boosted sales by cooperating in a national producer-consumer campaign. Beekeepers, **if organized** could do likewise.

(f) It is **Honey** that needs advertising, not brands of honey.

(g) The greatest need of our industry is a Moses to lead us out of the wilderness.

Shipping Bees and Queens

(5) Shippers of bees and queens realizing that buyers must make a profit try to give quality and service. Adverse weather conditions frequently make the business difficult.

(6) **Dr. C. L. Farrar,** Madison, Wis., said that the only solution to low honey prices is increased per colony production. Very populous colonies are the only kind worth having. An abundance of pollen for brood rearing is essential and no satisfactory substitute has been found for pollen.

American Honey Institute Day

(7) **Geo. W. Bohne** opened this session with appropriate remarks on the importance of various organizations in our industry, placing special emphasis on **our Institute.** We must have this organization to popularize honey.

In his inimitable manner Mr. Bohne then presented the new head of the Institute, Mrs. Harriet M. Grace of Madison, Wis., who made a very favorable and pleasing impression. Having majored in home economics, as a food and nutritional specialist in the University of Wisconsin, Mrs. Grace is well qualified for the work she is now undertaking. The Institute needs the moral and financial support of every person affiliated with our industry.

Meeting of Bee Inspectors

(8) This was a splendid meeting—and what a fine group of state bee inspectors from over the country. Our inspection work is in capable hands. The main thing accomplished was that Jas. I. Hambleton was asked to draft a model state apiary law, with regulations controlling interstate movement of bees on combs also used bee equipment. This, when accomplished, should prove to be a step forward.

Banquet and Fun

(9) No meeting is quite complete without a banquet to relieve tension. Directly following the sumptious meal W. E. Anderson presented none other than the jovial Commissioner of Agriculture, Harry D. Wilson of New Orleans who did a splendid job of toastmastering. The brief talks were interspersed with music and dancing.

(10) **A. P. Sturtevant** of the Laramie, Wyo., field station gave, "Progress Report of Recent Studies on AFB", which will appear in manuscript form in due time. Definite progress is being made along the line of developing a strain of bees with a high degree of resistance to AFB, but the work is slow. It will doubtless require years of painstaking work to make much progress. In the meantime diseased colonies owned by beekeepers should be properly and promptly disposed of. Burning appears to be the best method of dealing with AFB.

All in all the League meeting was a success. It brought together beekeepers from over the country for discussions, conferences and the sharing of experiences and opinions. Such meetings are worth while.

Our industry needs this national organization, the American Honey Producer's League, to formulate policies and worth while objectives, to help co-ordinate the activities of county and state associations, and to promote friendly cooperation among all organizations and individuals affiliated with the beekeeping industry. If our industry is to progress as it should we must all pull together.

The new officers for 1939 are President Geo. H. Bohne, Vice President, T. C. Burleson, Colusa, Calif., Sec. and Treas., Cary W. Hartman, Oakland, Calif.,

Board of Directors are: District No. 1, Edw. H. Sachs, Biglerville, Pa; District No. 2, Eugene Cutts, Montgomery, Ala.; District No. 3, Lewis White, Portland, Oregon; District No. 4, Thos. W. Burleson, Waxahachie, Tex.; District No. 5, Walter A. Munroe, Alveston, Ontario.

In closing I'm giving you three lasting impressions of the New Orleans meeting:

(1) Geo. Bohne boosting Louisiana honey.

(2) Guy LeStourgeon telling about Texas.

(3) Jim Hambleton with his quiet dignity and his smile.

Sacramento, Meeting Place for 1939

The meeting place for the American Honey Producer's League for 1939 is Sacramento, Calif. Just as we go to press a letter from J. E. Eckert, Davis, Calif. informs us that the committee on arrangements has already met and that dates set for the Sacramento meeting are Nov. 7, 8, 9 and 10, 1939. An unusually large attendance is anticipated, due to the fact that the International Exposition in San Francisco offers an opportunity to combine business with pleasure.

XUM

American Honey Institute Marches On

The Editors

Beekeepers over the country will be delighted to know that their best friend, the American Honey Institute, received a fresh impetus at the League meeting held recently in New Orleans.

At the business meeting held December 6 the following Board of Directors was appointed: M. S. Stone, Ogden, Utah, Chairman; A. G. Woodman, Grand Rapids, Mich., Vice-chairman; M. J. Deyell, Medina, Ohio, Secretary; Harry E. Ingalls, Basin, Wyo., Lewis W. Parks, Watertown, Wisc., V. G. Milum, Urbana, Ill., J. E. Starkey, Indianapolis, Ind., Robt. E. Foster, Gainesville, Fla., and L. C. Dadant, Hamilton, Ill.

The retiring members of the Board are due a vote of thanks for their service and devotion to a worthy cause. They have pledged wholehearted support to the new board, the new staff of the Institute and the Institute finances.

The Executive Committee which has full charge of Institute affairs was elected as follows: M. S. Stone, Mrs. Luella Mortenson, Madison, Wisc., J. E. Starkey, M. J. Deyell, and Robert E. Foster. The beekeeping public should have full confidence in these executives because they are vitally interested in the welfare of our industry.

The Finance Committee which has charge of raising funds for the Institute were named as follows: M. J. Deyell, Chairman; Roy K. Bell, Orange, Calif.; A. G. Woodman, Grand Rapids, Mich.; E. T. Cary, Syracuse, N. Y.; J. W. Holzberlein, Grand Valley, Colo.

The task of this committee, viz., to secure money to run the Institute so that it may advertise and popularize honey and thus increase the demand for honey, is not an easy one.

Beekeepers, supply manufacturers, honey bottlers, package shippers, queen breeders, in fact, all who are connected with our industry are earnestly asked to come to the financial aid of the Institute and help this Committee to carry on.

The Advisory Committee was left to the present chairman, Lewis W. Parks, who has had long experience in Institute work. Mr. Parks will continue with approximately the same Committee as in the past year.

The Institute Directors.—By a unanimous vote of six members of the Board present, Mrs. Harriet Grace, of Madison, Wisc., was chosen to manage the office of the Institute for the ensuing year. She has been given full charge and will operate the Institute under the directions given by the Board. Mrs. Grace will be under the direct control of the Executive Committee.

Mrs. Grace well qualified for her work.—The Institute is indeed fortunate to secure the services of Mrs. Grace. She is a resident of Madison, Wisc., and a graduate of the University of Wisconsin, having majored in home economics. She is a food and nutrition specialist.

Mrs. Grace has been before the public for a number of years and has attended Oxford and Cambridge Universities in England. She was for a number of years principal of the Watertown, Wisc., High School and has traveled widely attending national educational conventions. She has made four trips abroad. For six years she was secretary-treasurer of the Wisconsin Home Economics Association, was president two years and vice president two years. Also she has been chairman of the Madison Home Economics Club for 1935-1938. She has served on the Mayor's Theatre Committee for five years. Mrs. Grace has been highly recommended by Mrs. Luella Mortenson, of the Institute Advisory Board and by Miss Abbie Marlatt, head of the Department of Women's Economics at Wisconsin University.

Institute Finances—It is a pleasure to report that the Institute has come through the past year in good shape financially. Because of the short crop in 1937 the receipts in 1938 were somewhat below par. Due to the very able management of the Finance Committee expenses and activities were curtailed. The report of the financial secretary showed that on Dec. 1, 1938, all current bills paid and a substantial balance on hand. A full statement will be made in the Annual Report of Institute, Jan. 1, 1939.

(Continued on page 47)

American Honey Institute Notes

PRIZE WINNERS—HONEY MENU AND RECIPE CONTEST

Class A—**Holiday Cookies:** 1. Mrs. Joy Rice, St. Albans, W. Va.; 2. Sisters of St. Benedict, Crookston, Minnesota; 3. Mrs. Ernestine Voigt, Milwaukee, Wisconsin; 4. Mrs. Ervin Tuma, Cato, Wisconsin; 5. Mrs. Albert Larson, Rainier, Oregon; 6. Mrs. H. G. Lindholm, Sarona, Wisconsin; 7. Mrs. Leona Bull, Branch, Wisconsin; 8. Mrs. Arthur Gill, Evanston, Illinois.

Class B—**Sauces:** 1. Mrs. William Michaelson, Arkansas, Wisconsin; 2. Mrs. W. P. Johnson, Auburn, California; 3. Louise Diehnelt, Menomonee Falls, Wisconsin; 4. Mrs. Arthur F. Jackson, Grafton, North Dakota; 5. Mrs. Ernestine Voigt, Milwaukee, Wisconsin; 6. Mrs. Winifred Goss, Covert, Michigan; 7. Mrs. Ida E. Becker, Detroit, Michigan; 8. Mrs. C. Corrigan, Union Grove, Wisconsin.

Class C—**Menus:** 1. Mrs. H. A. Merrell, Wolcott, New York; 2. Mrs. Mildred Ross Walter, Canton, Ohio; 3. Mrs. Alex Kennedy, Akron, Ohio; 4. L. Meeker, Los Angeles, California; 5. Mrs. W. N. Preston, Juda, Wisconsin; 6. Mrs. Earl Payne, Plymouth, Wisconsin; 7. Mrs. Melvin H. Goeldner, Osceola, Iowa; 8. Mrs. William Scharl, Grafton, Wisconsin.

Class D—**4H Club:** 1. Jean H. Lee, Janesville, Wisconsin; 2. Evelyn M. Chapin, Cambridge, New York; 3. Shirley Fuller, Marengo, Wisconsin; 4. Maxine Fuller, Marengo, Wisconsin; 5. Jeanette V. Johnson, Clintonville, Wisconsin; 6. Ruth Davis, Anaheim, California; 7. Marjorie Finner, Dodge, Wisconsin; 8. Alice Greer, Sharon, Mississippi.

LETTERS RECEIVED

Attleboro, Mass.
Dec. 5, 1938.

American Honey Institute
Madison, Wisconsin
Gentlemen:

Please send me 500 copies of the prize-winning recipes. Am also enclosing $1.00 for my membership for the year. Will be happy when conditions are such that I may be able to send a real contribution. Heard our representative at Charleston and she is really a leader and a real advocate of honey. Should like to have attended the meeting at New Orleans but with no honey crop at all, just couldn't make it.

Yours very truly,
E. J. Cope

Milwaukee-Downer College
Milwaukee Wisconsin

Mrs. Harriett Grace
American Honey Institute
Madison, Wisconsin
My dear Mrs. Grace:

Thank you very much for the sixty pound tin of honey. It arrived today. I shall be very glad to write to Mr. Osborn telling him of its safe arrival and thanking him for it. We will keep it until our experimental work begins the second semester. I will let you know something of our results after using it.

Very sincerely yours,
Susan F. West
Director of Home Economics

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AMERICAN HONEY INSTITUTE MARCHES ON

(Continued from page 46)

Funds Needed—Although there is a balance in the treasury the amount in not so large as a year ago, nor is it sufficient to operate normally through the lean months, from April to July, when beekeepers are busy with their bees and thinking of other matters.

Because of present marketing conditions and the need of more advertising of honey it is imperative that contributions be made to the Institute **NOW.**

The future of the Institute—It is surely gratifying to know that whatever misunderstandings and differences there may have been about the Institute, that these have been ironed out. The set-up is practically new throughout. Of the entire staff placed in office a year ago, only two remain at present. These two are members of the Board of Directors whose resignations were refused by other members of the Board. It is gratifying, too, that the new personnel in charge are nearly all well-known to the beekeeping public and enjoy the confidence of the industry at large.

With this new set-up and renewed enthusiasm the American Honey Institute, with the cooperation and support of beekeepers everywhere is going to march on to greater accomplishments in making the public more honey-minded.

XUM

A Confab

Free for all Discussion of Timely Topics

Of all the topics discussed in Confab thus far, the question of hive entrances, their size, location, number per hive, etc., appears to elicit as much or possibly more interest than other topics. Certainly there are differences of opinion. Some favor the bottom entrance only, others the top entrance only, while still others maintain that both a bottom and a top entrance are essential for good wintering.

We hope eventually to summarize the discussion of winter entrances and reach some conclusions; but apparently, judging from the number and nature of the contributions received just recently, it seems advisable to continue on this topic, for the present at least, until more data from beekeepers in various parts of the world have been presented.

Chas. Mraz is for Top Entrances

After reading the article on entrances in November Confab by Grant D. Morse we are not surprised to receive a letter from Chas. Mraz of Middlebury, Vt., which follows:

Mr. Morse, in November Confab, seems to find no advantage in top entrances. After keeping bees in Vermont the past 10 years I wouldn't think of wintering bees without the so-called tube top entrance. I use the double-walled, outer-case hive, the new ones having the outside of sheet galvanized iron. We use 3 inches of shavings on the sides and about 6 inches on top for packing. The lower entrance is closed down to ¼" by 4". The tube entrance is ¾" in diameter extending from the inner wall to the outer wall about 7" above the bottom entrance. Mr. J. E. Crane, whom older beekeepers will remember, was one of the very early users of the upper tube entrance.

Mr. Morse's chief argument against the top entrance is the supposed loss of heat. The fact is, very little heat escapes from a cluster of bees. What little heat does escape, carries out with it a lot of moisture. Bees can stand lots of cold, but moisture is deadly at low temperature. I've seen a colony of bees go through winter in an outer-case hive with a feed can on top of the frames and the inner cover on top of the feed can. This made a "top entrance" as big as the top of the hive. The outside cover kept out the weather, with no inner cover at all on the brood chamber. It was missed in packing and the following spring this colony was found in perfect condition. The bees used very little if any more feed than packed bees. For winter, bees do not need much packing, but the early spring, March, April, and May, is when they need it most here, at the time brood rearing starts.

Chas. Mraz,
Middlebury, Vt.

Everett M. Warren of Medina, Ohio, who has had some experience in wintering bees out-of-doors in a cold climate emphasizes the importance of getting rid of excess moisture in hives, as follows:

Elimination of Moisture Very Important

All these varying opinions on the topic of top entrances for wintering indicate that, although we may be a long way from knowing which is best, we are on the road to a solution. When so much thought and observation is applied to a problem, we are bound to get results.

It is difficult to determine which entrance is the more natural, the top or bottom. In some bee trees the entrance is above the brood nest and in others, below. In still other trees the combs are built both above and below the entrance. If two trees could be found side by side with similar knot holes, in one tree the hollow above the entrance and in the other tree the hollow below the entrance, how would we know that a swarm entered one tree or the other because it was the more suitable? In all probabilities the scouts located that tree just by chance, and did not choose after inspecting both. But be that as it may, the moisture problem is uppermost in my mind in this discussion.

In the December Confab, Mr. Frank Labus of Minerva, Ohio, says that we know heat loss and draught are detrimental to bees, and that the best cure is to prevent the source of moisture. He suggests no packing or wrapping, and 100% protection from wind by means of windbreaks. Well, granted that we can furnish 100% protection from wind, a colony of bees will doubtless consume at least

a gallon or more of honey, and this means giving off a gallon or more of water in the form of water vapor. Some of that water vapor is sure to condense when it comes into contact with cold combs of honey or hive walls.

Bee Trees Absorb Moisture from Bees

If we go back to our bee trees once more and take a look at the heart of the tree after it has been cut down and split open, we will see plenty of porous dead wood around, below, and above the space occupied by the combs. The tree offers more insulation than the approximately ⅞" walls of the hive, and all that dead wood will absorb considerable water vapor without allowing it to condense and drop down on the combs and cluster of bees. Most of us agree that bees winter better when the moisture can get away from the cluster, or can be kept from condensing if not removed.

With little or no moisture around the cluster, bees seem to be able to survive pretty severe cold. I have seen a small apiary of about a dozen colonies come through the winter without the loss of a single colony, in hives which were practically without bottoms, with cracks between some of the covers and corners which were more than large enough for entrances. There were enough cracks to make excellent ventilation on a hot summer day, and in some cases the bottom-boards had so completely rotted away that the combs actually rested on the ground. Those bees were not bothered with moisture-saturated air. Of course, that condition is extreme and exceptional, but we can get a number of lessons from it.

If we can get rid of the moisture, will it do much harm if a little of the air which has been slightly warmed by the cluster should drift away with it? For quite a number of years I have successfully wintered colonies with a super of shavings or crushed dry leaves on top. Burlap was tacked onto the bottom of the super, and the hole in the inner cover left ⅛ or ½ open. Sometimes the escape hole was entirely open. Some of the hives had additional insulation and some did not, but a windbreak was always provided. Several of these winters were spent in a locality where 15 to 20 below zero is the usual thing, and one extreme winter the thermometer ranged from 25 to 38 below for ten days. The last week of March and first eight days of April it was zero every morning. One hundred percent wintering under such conditions should indicate that we are at least on the right track. There were no moldy combs, nor any icicles inside the entrances.

If we can get the moisture out of the hives and effect a gradual change of air, our bees can stand a lot of cold without very serious results. The United States Bee Culture Laboratory has found that there may be a difference of 75 degrees in the temperature of the air outside of the cluster and the temperature four inches inside the cluster.

Before placing credit or blame for good or poor success in wintering, on the type of entrance or packing, we should be certain that all important wintering requirements, such as populous colonies, ample stores of good quality and adequate protection, are present before the winter sets in.

Everett M. Warren
Medina, Ohio

An Ontario beekeeper, Thomas Martin, Forest, Ont., now gives us the result of his experiment with top and bottom entrances, also top packing, or no top packing.

Top Entrance Colonies Die During Winter

I conducted an experiment with top entrances last winter and will give you the results. I made nine winter cases. They were cedar lumber and lined with rock wool, with a sack of shavings on top of the honey-board. The lower entrance was ⅜ by 3 inches and the top entrance a hole in the end of the honey board, 1¼ x ⅝ inches. Seven were made in this way and two had no top entrance. When May arrived I had the two colonies with the bottom entrances; the others were all dead.

Now as to top packing, I have never had the courage to leave many colonies without any packing, but on two or three occasions by mistake I left a colony with only the honey board on top in the packed case, and every time it came through in better shape than those around them with the top packing. It may sound unreasonable but I am giving the facts.

Thomas Martin,
Forest, Ontario

It will be noted that Mr. Martin's experience with top packing (or the lack of it) is somewhat similar to the experience of Mr. Mraz.

XUM

The Charleston Meeting

M. J. Deyell

The Southern Beekeeping States' Federation meeting held November 28 to 30 at Fort Sumter Hotel, Charleston, S. C., directly across the Bay from the famous Fort Sumter, will go down in beekeeping history as one of the best ever held. Unfortunately, a spell of cold icy weather in the north and central states kept some beekeepers away. At least fourteen states were represented, however.

The meeting was called to order by the genial president, **L. M. Dewey** of Florida. **D. W. Watkins, Director** of So. Car. Extension Service, outlined the work being done in that state. He emphasized the importance of beekeeping in the agricultural set-up, urging the cooperation of beekeepers.

M. G. Dadant, Editor of American Bee Journal, called attention to three classes of beekeepers throughout the U. S. A., the small or back-lotter, the side-liner, and the commercial beekeeper. Each is making a contribution. The continuous change in crop rotation is affecting beekeepers, especially the commercial class. Beekeepers must be ready to adapt themselves to the ever-changing flora. New honey plants such as Zofka clover (a cross between red and alsike), Hardy Alfalfa of Siberia, alfalfa sweet clover and Melina sweet clover grown mostly in western Canada may replace, to a certain extent, the present sweet clovers.

David S. Blackwell, educational advisor of C.C.C. camps of N. C., told of a four-colony apiary being built up by a class of fifteen C.C.C. boys to the best commercial apiary in the state. According to Mr. Blackwell this is the only work of its kind in existence. Certainly there is an opportunity in Civilian Conservation Camps for the development of our industry.

George Rea, Bee Extension Specialist of New York State, said that 50% of the orchards of New York state are not pollinated, due to a lack of honeybees. Also, it is necessary that hives of bees be properly distributed over an orchard to secure thorough pollination. Growers of cabbages, cucumbers, melons, and tomatoes are realizing the importance of bees as pollinators. Buckwheat has to be cross-pollinated for maximum seed yield.

David Donavan, teacher of beekeeping at Clemson College, made us more familiar with the anatomy of the honeybee by showing some excellent slides. The bees' sense of smell may be located on the antenna or on the wings. It is not known whether bees can hear, and if so, where the hearing apparatus is located. It used to be thought that royal jelly was secreted in the stomach of the bee and regurgitated, but now it is known that this jelly is secreted in the pharyngial gland in the head. Post cerebral glands back of the brain give off a fatty secretion used in making wax. It is reasonable to assume that there may be some genetic improvement in the future bee.

The American Honey Institute was ably represented by **Mrs. Harriet Grace** now in charge of the Institute office. Mrs. Grace gave an inspiring talk on honey, also some valuable suggestions for its publicity, by the Institute, some of which were that teacher-training organizations be contacted; that a booklet on honey be prepared for hotels and restaurants; that honey poster contests be used in schools; that some special service in the way of printed matter be given packers of honey, and that the radio be used to popularize it.

It should be said parenthetically that our American Honey Institute is needed more than ever before to acquaint the public with the merits of honey.

Robert E. Foster, State Apiarist of Florida, called attention to the fundamentals of beekeeping, which are likely to be overlooked, even by expert beekeepers, so-called. The factor most commonly overlooked is the importance of an abundnce of stores for each colony.

George Abrams, Specialist in Beekeeping for Maryland, pointed out some characteristics of his state. It has about 4000 beekeepers with about 32,000 colonies. Most of the beekeepers are sideliners. Much of the honey is sold at roadside stands locally. Maryland was admitted into the Southern Beekeepers' Federation at the Charleston meeting.

Guy LeStourgeon, Editor of Beekeepers' Item, in the course of his remarks did his best to uphold the traditions of his Lone Star State. Those present were convinced that Guy could easily qualify as a star salesman for a Texas real estate or oil company. But Guy was serious a part of the time. His opinions and suggestions regarding the feasibility of drafting a model or uniform state disease law for all states that would control and regulate the intra and inter-state movements of bees were taken seriously.

Geo. Bohne, Luling, La., without a doubt the state's most ardent booster of

(Continued on page 60)

Talks to Beginners

M. J. Deyell at his desk.

Entomologists tell us there are approximately one-half million kinds of insects on this planet. One naturally wonders why all of them were created. It has been said that the bugs may eventually eat us up. Millions of dollars are being spent annually on insect control. In fact, entomologists are so busy trying to destroy insects injurious to plant life that they haven't found much time for the honeybee, one of the very few insects that has a high commercial value. As a matter of fact, the honeybee and the silk worm are the only two insects that are kept commercially. Beekeeping has become an important branch of agriculture.

A Marvellous Phenomenon

It seems reasonable to assume that nectar is secreted in plants, primarily to attract insects in order to bring about the pollination of blossoms, as the bees and other insects fly from one blossom to the next and thus distribute the pollen. We are told that bees are at least ten times more valuable as pollinators than they are as honey-gatherers. What a wonderful provision nature has made and what an important part the honeybee plays in the pollination of fruit trees, legumes, vegetables, and other blossoms.

Orchardists over the country and those who grow clover for seed, also vegetable growers, are waking up to the value of bees for pollination purposes. Such growers must have bees nearby at blooming time to insure maximum yields of fruit, clovers, and vegetables.

Beekeeping Not a Young Industry

The keeping of bees and the use of honey as a food reach back into the dawn of civilization. It isn't unreasonable to assume that the cave man, in order to obtain some of Nature's oldest and choicest sweet was willing to forego the inconveniences of a few bee stings in securing some combs of honey from a swarm of bees in one of its natural habitats, a hollow tree or the crevice of a rock.

Bees have been kept down through the ages in boxes and skeps and man has thrived on honey. Not until 1853 was it possible to handle hives of bees easily and satisfactorily, for it was during that year L. L. Langstroth, a Presbyterian minister, discovered the bee-spacing frame hive. Since that time it has been possible to manipulate colonies of bees with ease, lifting out one frame at a time to examine the combs and bees and to take surplus honey. Our industry has forged ahead since Langstroth's invention which marked a new epoch in beekeeping.

Beekeeping—Old and New

The keeping of bees from time immemorial has been shrouded in romance and mystery. Interesting legends concerning bees and honey have been passed down to us from past generations. The old type of beekeeper with his long pipe to quiet the bees, is passing. Some of the romance and poetry of beekeeping is being lost. The old timer was a close observer of bee behavior. He knew the characteristics of each colony; he took time to enjoy his bees; he loved them.

The average modern commercial beekeeper is in business primarily for profit. He familiarizes himself with the latest approved methods of apiary management. And so, commercial beekeeping has become a business involving the profit motive.

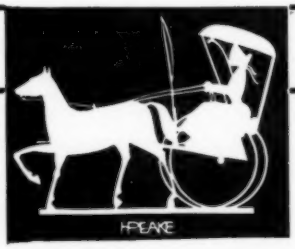
The sideline beekeeper has more time, as a rule, to really enjoy his bees, mainly because he has less hives to care for and more leisure time.

It would seem as though pleasure in keeping bees should be emphasized as well as profit, regardless of the number of colonies owned.

And so, this coming year as we go along together I shall try to share with you my experiences and opinions so that we may all get the greatest possible pleasure and profit from our bees. You will be interested to know I have 70 colonies of my own that I operate as a sideline; also, I manage almost 1200 colonies for The A. I. Root Co. I'm quite sure we are going to have an enjoyable season together.

XUM

Spinster



Jane Says:

Happy New Year to you all; to Gleanings' staff and readers, beekeepers and bee-minded folk, lovers of honey, everywhere.

And isn't happiness the greatest thing in the world? Without it, what is success or wealth? Fruit without flavor; meat without salt; ashes in the mouth; life without wholesome ambition. But with it, what a wonderful thing life is! Full, replete with rich content; every moment worth while.

And what can give us this great gift? They say the answer is, "Do something for somebody quick." Yes, the secret lies in helping those who need help at every opportunity. It means just forget yourself, and though it sounds easy, it isn't so easy as it sounds. In fact, it's a mighty big thing to do. So far as we know, only One ever succeeded in doing this, and He was divine.

But if during 1939 we follow the humble honeybee, we will come a great deal nearer the millenium, it seems to me, and I'm sure we will find happiness. Let us then, include this in our New Year resolutions. Remember it is better to make resolutions and break them, than not to make them at all. So let all the bee-minded take the honeybee for a model throughout the coming year.

Like Solomon's wise woman, they look well to the ways of their household, and eat not the bread of idleness. Just substitute "honey" for "bread", and "colony" instead of "household".

There is our first example. Keep busy. Without work there is no real happiness.

Bees are contented, singing as they work. No matter what task is assigned them, caring for and feeding babies, carefully mixing their formulas, cleaning and polishing cells, guarding entrances, or carrying and storing pollen and honey, whoever heard of a dissatisfied bee! Can as much be said for us? We loathe and detest certain work, and get out of it if we can.

Bees concentrate on whatever work they are doing. Their heart is in it, and they give it all they have. Humans work half-heartedly when they do not care for their job, their minds miles away from what their hands are doing mechanically.

Bees do not quarrel in their own colony. They are loyal to their queen, their laws, and to their sisters. When attacked, they will fight back. Who would not? With them, too, preservation of life is the first law of nature. If let alone, they are peaceable, picking no quarrels.

They stand by their sisters in attacking an enemy. If two or three cannot put the foe to rout, a score can do the trick. The human, or is it the inhuman, way is to say, "Let them fight their own battles. It is no business of mine. Maybe it will help me in my money-making."

The bees' one big fault is their greediness, and with them, as with some dictators, might is right. They steal from their weaker neighbors, but they use what they steal for the good of the entire colony. They are really superior to the financier who corners wheat, or some such necessity of life, not for his brothers, but to enrich himself.

Their patience is great. Their objective is sometimes amazing, yet by keeping at work untiringly, they accomplish it. Best of all, whoever heard of dissatisfaction or rebellion in the colony?

Bees are home-lovers. No gadding and gossiping for them. They must be about their business every minute.

The world knows no better trained children than the young bees. The World War has not affected their morals. Steadily and soberly they go about their work, just as their sisters before them.

This has really become a sermon on the honeybee, but when wise old Solomon could point the sluggard to the ant, why cannot we substitute the much-more-worth-while honeybee?

Opinions differ greatly regarding package bees. Honey Boy has met an old beekeeper who advises against them. He has no luck with them. Just the same, I'll continue to root for them as long as they succeed with us.
—Spinster Jane.

LETTER TO ALL HANDLERS OF PACKAGE BEES AND QUEENS

Auburn, Ala., December 13, 1938

J. M. Robinson
Managing Director of Marketing Agreement and Order

This is to remind you that on December 6, 1937, there was a public hearing in New Orleans before the AAA officials requesting a Marketing Agreement and Order for the handlers of honeybees. After due consideration and a referendum vote of the handlers of honeybees, the Secretary learned that 82% of the volume of business had voted for a marketing agreement and had requested him to issue orders to those who did not vote for the Marketing Agreement. On January 21, 1938, the Secretary of Agriculture tentatively approved the Marketing Agreement. On September 6, 1938, he approved the Marketing Agreement and Order. The Control Committee, consisting of W. E. Harrell, Alabama, M. S. Fortune, Mississippi, J. W. Newton, Louisiana, T. W. Burleson, J. E. Wing, California, and H. F. York, all other states, have been selected by the Secretary.

The Control Committee held its organizations meetings in New Orleans on December 4-5-6, 1938. W. E. Harrell was elected Chairman of the Control Committee and J. M. Robinson was elected Managing Director. The budget was set up to carry on the expenses of operation under the new Marketing Agreement and Order and assessments were established amounting to 1c on each pound of bees sold, 1c on each queen sold, and 1c on each additional comb sold, in order to raise the budget.

Representatives of the General Crops Section and the Field Investigation Section of the AAA met with the Control Committee and gave valuable assistance in setting up the new organization. Like all other AAA activities under the amended laws, it is enforcible in the courts. We have the assurance of the federal government officials that they will go with the Control Committee in helping to put over the Marketing Agreement and Order. However, the final test of making this Marketing Agreement work will depend upon each individual shipper's cooperation in carrying out its provisions.

By referring to Article IV, Section 1, of both the Marketing Agreement and Order, you will note that open price filing takes the place of minimum prices. We are, therefore, enclosing two price filing blanks so that you may fill them in, return one of them to this office and retain one for your files. As soon as we receive your price filings, we will send a copy of them to all handlers of honey bees so that they may meet such prices if they so desire. This will assure fair competition. When you file your prices, those prices become effective ten days from the date of mailing to the Managing Director's office.

This office will attempt to serve you by the authority of the Marketing Agreement and Order.

THE TORONTO BEE MEETING

M. J. Deyell

It was a pleasure to spend a part of two days attending the Toronto meeting held November 22 to 24. As usual the attendance was good; in fact, at some of the sessions standing room was at a premium. It may be necessary in the future to secure larger quarters.

The following are a few **high spots** of the convention:

(1) Dr. E. J. Dyce, Secretary-Treasurer and Provincial Apiarist, said that more attention must be given to keeping super combs free from disease, also that it is undesirable to move diseased colonies. They should be destroyed and properly disposed of on the spot immediately when the disease is found. Of the 57,400 colonies inspected in Ontario this past season less than 4% were found diseased.

(2) It was suggested that the clause, "spraying of fruit should not be done while **in bloom,**" instead of **"full bloom,"** be included in the Ontario Bee Act. This would doubtless save many bees.

(3) G. F. Townsend of Banting Institute, Toronto, gave some valuable information on the destruction of yeasts in honey. A temperature of 145° F. will destroy yeasts in 30 minutes, while a temperature of 150° will destroy them almost at once. If honey is heated to

(Continued on page 60)

XUM

Buy and Sell Here

CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 15th of month preceding.

HONEY FOR SALE

COMB HONEY. Ida Guhl, Napoleon, Ohio, Rt. 2.

HONEY in new sixties. Walter Rink, Port Hope, Michigan.

CHOICE CLOVER honey in 60's, 6½c. John Bour, Tiffin, Ohio.

HONEY—Clover and buckwheat, extracted. Geo. Sowarby, Cato, N. Y.

FANCY clover honey, case or quantity. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FINEST clover extracted by case or ton lots. Jones Apiaries, Sauquoit, N. Y.

BASSWOOD HONEY—60-lb. cans, $6.00. Adams & Myers, Ransomville, N. Y.

NORTHERN Michigan white honey, case or carload. C. J. Freeman, Mesick, Mich.

WHITE extracted honey in 60's, 7c. Burghardt Honey Farms, Grand Island, Neb.

DELICIOUS clover honey. Scribner Hill Apiaries, Ionia, N. Y. All standard packs.

CLOVER comb and extracted. Quotations on request. Howard Grimble, Holcomb, N. Y.

LIGHT clover honey—finest quality, in new sixties. Leland Farnsworth, Davison, Mich.

CHOICE CLOVER and light amber honey in 60's. The Hubbard Apiaries, Onsted, Mich.

FINEST CLOVER extracted honey, 60-lb. cans, 7c per lb. Irvin Van Devier, Medina, O.

CHOICE BASSWOOD honey, 6c per pound. New cans and cases. Gelser Bros., Dalton, N. Y.

CHOICE clover honey, new 60's case, $7.20. Sample 10c. Owosso Dairy, Owosso, Mich.

MICHIGAN'S finest well-ripened white honey in new 60's. Jay Cowing, Jenison, Mich.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Fort Pierce, Florida.

DELICIOUS white clover, also light amber honey. Samples free. Henry Stewart, Prophetstown, Ill.

STOLLER'S Unexcelled quality clover honey, 5's, 10's and 60's, finest obtainable. Prices on request. For satisfaction, write STOLLER APIARIES, Latty, O.

FANCY clover honey, in new 60's. Send for sample and price. A. A. French & Son, Theresa, N. Y.

CHOICE WHITE clover honey in 60, 10 and 5 lb. tins. Sample free. Harry T. Gable, Romulus, N. Y.

WHOLESALE—White comb honey, reduced prices. Extracted, all grades. N. B. Querin, Bellevue, O.

FOR SALE—Fine quality white clover honey, new cans. Sample 10c. Frank R. Parmelee, LeRoy, N. Y.

CHOICE white clover and light amber extracted honey in new 60's. Noah Bordner, Holgate, Ohio.

WHITE clover and buckwheat honey in 60's. Finest quality. A. B. McHenry & Son, Stillwater, Pa.

BEST CLOVER in 60's, 7c; liquefied, 7½c; light amber, 6c and 6½c. E. S. Miller, Valparaiso, Indiana.

NEW CROP CLOVER extracted. Let me know the quantity you can use. Emery Horton, Holcomb, N. Y.

FINEST QUALITY clover honey. Also light amber. Case or carload. Don Barrett, Howell, Michigan.

MICHIGAN clover honey—New 60's, any quantity. Sample 10c. Kenneth Atkinson, Casnovia, Michigan.

HONEY COMB and extracted, any amount. Co-operative Honey Co., 12801 Woodland Ave., Cleveland, Ohio.

ALSIKE, white clover, sweet clover, and amber honey. Attractive price. Frank Rasmussen, Greenville, Mich.

A-1 WHITE CLOVER extracted honey in 60's. State your wants. Leonard S. Griggs, 711 Avon St., Flint, Mich.

FANCY TUPELO and light amber honey for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

NEW YORK STATE finest clover honey in 60's and five-pound pails. Walter Severson, Box 825, Albany, N. Y.

ASK FOR our new lower prices on our best Michigan clover honey. E. D. Townsend & Sons, Northstar, Michigan.

NO. 1 AND FANCY light comb honey, $3.00 and $3.25 per case. Extracted, 6c in 60's. H. R. Shelton, Parma, Mich.

CHOICE new white clover honey in 60's and in 5 and 10 lb. pails. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

WE BUY AND SELL ALL KINDS COMB and extracted, carloads and less. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

CLOVER HONEY FROM CLOVERDALE. Ohio's finest clover extracted in 60's. Sample, 10c. Prices upon request. The Cloverdale Apiaries, Cloverdale, Ohio.

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FINEST QUALITY white clover honey, $7.20 per case, 120 lbs. Sample, 10c. Arthur Thayer & Sons, Freeland, Mich.

WHITE CLOVER, light amber and No. 1 white comb; also ¼ H. P. 32 volt motors. Lewis Klaty, Carsonville, Mich.

CHOICE white clover and light amber extracted honey in new 60's, by case or ton lots. R. J. Williams, Attica, Ohio.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

GET MY PRICES on white clover honey in glass or tin. Prices very reasonable. Angus Carruthers, Rt. 2, Syracuse, N. Y.

SUPERB quality clover honey at rock-bottom prices. Case or quantity. Inquiries invited. Scott's Honey Farm, La Grange, Ind.

WHITE CLOVER 7c, and buckwheat 5½c, in quantity lots, packed in new 60's. Finest quality. H. B. Gable, Romulus, N. Y.

SELECT LOTS—Extracted honey. Prices right. Write us about your needs. A. I. Root Co., 224 West Huron St., Chicago, Ills.

CHOICE clover, clover-basswood in sixties, five-pound pails and one-pound jars. Carl Holcomb, 1913 Francis Ave., Troy, N. Y.

COMPLETE line comb and bottled honey, pure clover. Also packed in 5's and 60's. Central Ohio Apiaries, Inc., Millersport, Ohio.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

REDUCED PRICES to close out—Fancy and No. 1 comb honey, white clover, amber and buckwheat, also, extracted. C. B. Howard, 59 Lyceum St., Geneva, N. Y.

WELL RIPENED clover in 5's and 60's; fine buckwheat in 5's, 60's, and 160 pound kegs. Sample 10c deducted from order. Coggshall & Son, Groton, N. Y.

EXCELLENT QUALITY clover honey in new 60's, 7c; 5 and 10 lb. pails, 8c, in quantity. No. 1 comb, $3.50. Ohmert Honey Company, Dubuque, Iowa.

CLEAN well-ripened clover or buckwheat in 60, 5 and 2½ lb. tins, buckwheat also in kegs, case, or truckload. Sample, 10c. Earl Rulison, Route 1, Amsterdam, N. Y.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys We stock all varieties. Hamilton & Co., 1360 Produce St., Los Angeles, California.

HOWDY'S HONEY: Fine quality white, clover, also buckwheat and light amber mixed extracted in new sixties. White, clover, Honey Hunks. Howard Potter, Ithaca, Michigan.

FOR SALE—Fine clover honey, also fall flowers amber honey, in 60-pound cans. Prices and sample for the asking. Tons of each kind. Let us serve you. W. S. Earls, New Canton, Ills.

NEW clover comb, extra nice, 12 to 16 oz., mostly 15 oz. Very white, well capped. 24 sections, $3.00. Guaranteed to arrive in good condition by freight. Clarence Engle, Kearneysville, W. Va.

HILTNER'S quality white clover honey is really a fine honey, produced in modern apiaries, extracted with finest equipment, packed in new cans. Prices on request. Ray Hiltner, North Creek, Ohio.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

AMBER HONEY 2 60-lb. cans, $5.10. F.O.B. Dundee, N. Y. Write for price on buckwheat. Address Roscoe F. Wixson, Dundee, New York.

COMB No. 1, to fancy weight clover, cellophaned, $3.00 per case of 24 sections. Well-ripened clover extracted in 60's, 7c; ton lots, 6½c. Honey taken from our door, 5% discount. H. G. Quirin, Bellevue, Ohio.

RASPBERRY HONEY blended with clover in new 60-lb. cans for 10 cts. a lb.; 5 or more cans, for 8 cts. a lb.; 10-lb. can by mail prepaid for $2.00. Sample by mail for 20 cts. Elmer Hutchinson & Son, Lake City, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—Comb, chunk comb, white and light amber extracted honeys. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wisconsin.

FOR SALE

QUEEN PAINTING OUTFITS, $2.00 postpaid. Southwick Apiaries, Waban, Massachusetths.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

COMB FOUNDATION at money-saving prices. Plain, wired, and thin section. Wax worked at lowest rates. Comb and cappings rendered. E. S. Robinson, Mayville, N. Y.

CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

We will buy your WAX or mill it into Schmidt's Economy Foundation. Write us concerning your next season's needs. Finest quality. Prices reasonable. Oscar H. Schmidt, Rt. 4, Bay City, Mich.

QUALITY packs of pure maple products, buckwheat and clover honey in latest styled packages, all sizes. Prices are right. May we have a trial order from you. Northern Maple Syrup Co., Liverpool, N. Y.

$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers, filling thousands of pounds of comb foundation, and hundreds of thousands of board feet of lumber into bee hives annually. QUALITY AT LOW COST is our motto. Free catalog. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

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Happy New Year

May we help you to make 1939 a whole Year of happiness by furnishing you Package Bees and Queens from our Imported Stock. You will be pleased with our

Service
Uniform quality and
Size of package with
Full weight upon arrival
Gentleness and Energy of the Bees
Good wintering Qualities

Also Domestic Stock if you prefer.

Satisfaction Guaranteed

Rossman & Long
Box 133, Moultrie, Ga.

Package Bees & Queens

LEATHER-COLORED ITALIANS

2-lb. Pkg.—Young laying queen,..	$2.45
3-lb. Pkg.—Young laying queen,..	3.15
4-lb. Pkg.—Young laying queen,..	3.85
5-lb. Pkg.—Young laying queen,..	4.55
2-frame nuclei, 2-lbs. bees, ...	
Young laying queen,.....	3.00
Young laying queens, ...	.75

15% discount to dealers.

Give us a trial order on some of our full-weight packages. Every guarantee pertaining to package bees and queens.

GOOCH APIARIES
Farmersville, Tex.

Latty, Ohio Sylvester, Ga.

Honey Wanted

Also beeswax in exchange for package bees and nuclei from our southern apiaries, spring delivery. We can supply the finest 4 and 5 frame nuclei, put on the market. Can deliver by truck to your door; also strong packages—thousands of them.

Write the

The Stoller Apiaries
Latty, Ohio

YOUR WAX worked into medium brood foundation for 15c pound; 100 pounds, $11.00; thin super, 22c. Fred Peterson, Alden, Iowa.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over F53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Michigan.

BEES AND QUEENS FOR SALE

ITALIAN QUEENS, W. G. Lauver, Middletown, Pa.

SILVER RUN QUEENS are sterling. Try them. W. E. Streetman, Fortson, Ga.

CHOICE three-band Italian queens in season. White Pine Bee Farms, Rockton, Pa.

CAUCASIAN bees. Booking orders now for 1939 delivery. P. B. Skinner Bee Co., Greenville, Ala.

QUEENS MAILED ANYWHERE, anytime, at market price. Circular mailed. D. W. Howell, Shellman, Georgia.

TO MAKE SURE of a good honey crop, try our Three-banded Italians. Alamance Bee Company, Graham, No. Car.

PACKAGE BUYERS—It will pay you to get in touch with us before buying bees for this year. Rapides Apiaries, Winnfield, La.

65 COLONIES of Italian bees in Sarasota. Bees guaranteed free from disease. All or part. Write H. W. Coley, Sarasota, Florida.

HESSMER BEE FARM will quote you prices on package bees and queens for 1939 on request. Address Hessmer Bee Farm, Willie Roy, Hessmer, La.

CAUCASIANS. Package bees and queens for 1939. Ready to book your orders for spring delivery. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

THE NORMA ROY APIARIES—Italian bees on comb brood and honey, with queen introduced if desired; also combless package. Write for price. Mr. Norma E. Roy, Hessmer, Louisiana.

ITALIAN QUEENS, carefully reared, high producing. European foulbrood resistant. New Jersey Experiment Station stock, 75c. Spicer stock, one dollar. Circular. E. G. Carr, Pennington, N. J.

(QUEENS WITH CHARACTER)—My business almost doubled in '38—there was a reason. I supplied my customers with the best queens that could be purchased. If you haven't tried them, ask your neighbor. I can fill your early orders. Start shipping about March 10th. D. P. Green, Deland, Fla. R. 2.

MISCELLANEOUS

LABELS—NEW DESIGNS. Samples free. Thoughtgift, 50 Presque, Rochester, New York.

EQUIPMENT SERVICE—We will mail and assemble your new hives at reasonable price. Chemung Valley Apiaries, Horseheads, N. Y., Route 3.

FOR SALE OR TRADE—Queen mailing cages. Bee shipping cages and comb honey cases. Free sample. Beeline Apiaries, Menomonie, R. 5, Wisconsin.

ECKHARDT QUEENBEE MARKER—Now available in United States and Canada. Literature upon request. Lee B. Trawatha (Sole Representative) Willoughby, Ohio.

POPCORN—Choice yellow mushroom, 10 pounds $1.00. Postpaid anywhere east of the Mississippi. Special wholesale price on 100-lb. lots. J. A. Zeilinger, Bay City, Rt. 2, Mich.

THE BEE WORLD—The leading journal in Great Britain, and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership in the Club, including subscription to the paper, 10/6. The Apis Club, L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

DAIRY GOATS

LEARN ABOUT DAIRY GOATS—monthly magazine $1 yearly; sample copy and information free. Dairy Goat Journal, Dept. 919, Fairbury, Nebr.

EXTRACTORS FOR SALE

FOR SALE—8-frame gasoline power honey extractor; also Gilson air-cooled engine, in good condition. Chas. D. Handel, Savanna, Ills.

FOR SALE—2-frame reversible extractor with 9½" pockets. Both Root machines. Reinhold Wegner, City of Lakes Apiaries, Wilbert Station, Fairmont, Minnesota.

POULTRY

MAKE MONEY WITH POULTRY—Read America's leading poultry magazine for latest information. Three years $1.00; nine months 25c. Poultry Tribune, Dept. C-52, Mount Morris, Illinois.

HELP WANTED

EXPERIENCED apiarist for 300 colonies on shares or for sale. W. S. Spaulding, 118 So. G St., Marion, Ind.

WANTED—Position as queen breeder or honey producer. Experienced north and south. Preferable year work. Married. O. K. Anderson, Opp, Ala.

HELP WANTED—Two more helpers for 1939 season, in large honey business. Board and room furnished. Write particulars. M. E. Ballard, Roxbury, N. Y.

EXPERIENCED man wanted to assist in managing 3000 colonies in the North. A young man with some queen rearing experience in the South preferred. Send answer in care of this magazine, Box No. 38.

POSITION WANTED

WANTED—Work with commercial beekeeper, queen breeder, or supply manufacturer. Experience, age, other information furnished on request. Box 35, Gleanings in Bee Culture, Medina, Ohio.

WORK WANTED for 1939 season. 25 years' experience with bees, commercial honey production, comb and extracted, queen-raising and package bees, manufacturing bee supplies and honey bottling. Capable of taking charge in outfit of any size. Address "B" c/o Gleanings.

TOO LATE TO CLASSIFY

FINEST clover honey, 7 cts., new sixties. W. G. Roediger, Kettlersville, Ohio.

NEW CLOVER honey in 60-lb. cans, 6½c. None finer. Walters Apiaries, Burgoon, Ohio.

FOR SALE—Buckwheat honey in kegs and 60-lb. cans 5c. Seward Van Auken, Duanesburg, N. Y.

60,000 lbs. finest quality clover honey, case lots, 7c. Write for sample and prices on ton and car lots. Leroy C. Keet, Watertown, New York.

EIGHT TONS, or any part of it, of fine clover honey to the highest bidder. Bids to close Jan. 15th. Must be sold. First come first served. John Leonard, Scottsville, N. Y.

Start the New Year Right!

Order your package bees and queens from a firm with a reputation for good service, good stock and a square deal. Write for circular and price list.

J. M. Cutts & Sons
R. 1 MONTGOMERY, ALA.

Book Your ORDER

Where you will be sure to get the best Quality and Service.

Italians and Caucasians.

Weaver Apiaries
Navasota, Texas

Smith's Bees and Queens

Wish every beekeeper a very Happy New Year. They will make it a PROSPEROUS one, too, if you will give them a chance.

Write for prices and information as to our HIGH PRODUCING records. None better at any price.

N. B. Smith & Company
Calhoun, Alabama

MACK'S QUEENS
(They Speak for Themselves)

Big Hardy Northern-Bred Italians that are Fully Guaranteed. They produce powerful colonies that really bring in the honey. Will have package bees for May delivery. No deposit to book your order. Prices upon request.

HERMAN McCONNELL
(The Bee & Honey Man)
Robinson Rte. 2 Illinois

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It is a PROVEN FACT

Based on the Shipment of Thousands of Our Special Loose-Queen Packages

Queen Supersedure has been Reduced to Less Than 4%

Write for complete information and free illustrated booklet now ready for distribution.

The Puett Company

Hahira, Georgia

"Where Satisfaction is a Certainty"

We wish to extend to our many friends and customers the best wishes of the holiday season. Now booking orders for queens and package bees at code prices.

Geo. A. Hummer & Son

Prairie Point, Miss.

MAKE YOUR LITTLE FARM PAY

Get a BOLENS heavy duty Garden Tractor for plowing, harrowing, diseing, field and garden cultivating, mowing, spraying, digging, belt power. Also BOLENS Power Hoe and other models, for light gardening and lawn mowing. $79.50 up f.o.b. factory. It's fun to run a BOLENS.

BOLENS GARDEN TRACTORS

1919 Park St., Port Washington, Wis.

McVAY'S Bees and Queens

J. F. McVAY

Jackson, Alabama

American Honey Institute

the Beekeeper's Best Friend

Mr. Beekeeper: To help yourself you should help the Institute

Send your contribution **NOW** to

American Honey Institute

Madison, Wisc.

For complete information on the new Institute set-up and reorganization see page 46, this issue.

This space donated by Gleanings in Bee Culture

WRITING ON THE WALL

(Continued from page 18)

others were to form an organization with not too ambitious undertakings for a starting program, some real progress might be made. It would need to be a separate organization, since state associations are incorporated on a non-profit basis, but the meetings could be coordinated with the meetings of state associations if deemed desirable. It may be wise, also, to make it a prerequisite that these organized commercial beekeep ers shall be members of a state association. We may expect this matter to be brought up at the fall meeting of this association.

We commercial beekeepers know that the principal difficulty centers in the decreasing profits in our business. How may we lower production costs? How may we stabilize honey prices at a legitimate profit for the honey producer? Can honey be processed, combined with something else, or in some way utilized so that the producer will receive a just and greater share of the consumer sale price? These are among the questions for a commercial beekeepers' organization to ponder. Other questions will arise from time to time that seriously affect commercial beekeepers, and if they have an organization through which to speak, their cause will be heard. Outside help is improbable; commercial beekeepers must themselves save their business.

Orderly Marketing

At the present time two things are needed in honey merchandising—vigorous advertising of the right sort and orderly marketing. These functions are complementary when handled in the right way. When honey is well advertised for its health giv ing properties it will create a demand that will permit an orderly steady market.

This is a big job, but it is the job which confronts us, and we must not only tackle it but we should succeed with it. Honey production has gone ahead with big strides since world war days, but our marketing is a faulty dumping of honey as soon as harvested and needs some sort of stabilizing influence. Are we willing to tackle the problem that faces us?

Notwithstanding the disastrous results of a honey producers' organization in this territory that "flew too high," the need for a commercial beekeepers' organization, beekeeper

(Continued on page 62)

PACKAGE BEES
AND QUEENS

Let us reserve your shipping date. Two, Three and Four pound packages with queens.

If you have been bothered with queens being superseded the first season, try ours and be convinced.

The Crowville Apiaries
Winnsboro, La.
J. J. SCOTT, PROP.

Get My Prices
before booking your orders for
BEES and QUEENS

Quantity price on small orders. Ready for shipment March 20th. Safe Arrival and Satisfaction Guaranteed.

W. O. Gibbs
BROOKFIELD, GA.

Caucasian Package Bees and Queens for 1939

At prices you are willing to pay. Booking orders now. No deposit required. Catalog and description sent free.

BOLLING BEE CO., Bolling, Ala.

THRIFTY

Three-Banded Italian Bees
Combless Packages and Queens.
Now booking orders for 1939.
W. J. FOREHAND & SONS
Fort Deposit, Ala.
Since 1892.

Queen Loose Package
Three-Banded Italians

Your best bet in the combless package type. Booking orders for 1939. Write us.

EPHARDT'S HONEY FARMS
Luling, Louisiana

One of the queen yards of our 10,000 nuclei.

Overbey Apiaries, Bunkie, La.

The Home of Good Beekeeping

Place your order with a reliable and growing concern. Our advancement in growth in bee culture is possible, only through Satisfied Customers. They are our greatest assets. They have learned to depend upon us, as a bee firm that can serve them with the kind of bees that they want, when they want them. Our bees are young, hardy honey-getters. Our queens are young, prolific, non-swarming Italians. Our services are among the best. Your increased crops will convince you that you get your money's worth when you patronize us. Write for our 1929-'39 pictured pamphlet, illustrating our past ten years' growth in ability to serve you.

PRICES:

2 lbs. with young Italian queen.....$2.45
3 lbs. with young Italian queen.....3.15
Extra queens ..... .75

15% off to authorized dealers.

Overbey Apiaries, Bunkie, La.

THE TORONTO MEETING

(Continued from page 56)

160°, or higher, it should be cooled immediately to prevent carmelization, and a large tank of honey should be cooled by a jacket for water surrounding the tank, also, an ogitator should be used to keep honey moving inside of the tank.

(4) According to C. A. Jamieson, Bee Division, Ottawa, pollen analysis is becoming a satisfactory method to determine exactly the origin or source of honey.

(5) It was suggested that apiaries in towns and near highways be surrounded by a fence 8 feet high or a row of trees to make the bees fly up and over.

(6) The moot question of honey vs. syrup for winter bee food is still discussed. While there are still advocates of sugar syrup the consensus of opinion is that a honey of good quality is satisfactory and economical, especially in view of low honey prices.

(7) C. B. Gooderham, Oominion Apiarist of Ottawa, in his remarks on, "Factors Affecting Cost of Production," gave us some sound advice, "Prepare bees for winter just as though the coming winter will be the worst ever experienced."

Canada is likely to have a record honey crop for 1938. Beekeepers across the line are confronted with practically the same problems as are beekeepers in this country. We have much in common.

THE CHARLESTON MEETING

(Continued from page 50)

Louisiana honey, gave us a clear-cut picture of the various organizations in our industry. The county and state bee associations are exceedingly important and should cooperate and affiliate with our American Honey Producers' League, also the American Honey Institute.

Fun and Frolic have their place, even at a bee convention; and so, a boat trip was planned to old Fort Sumpter, also a banquet and floor show, which were enjoyed by all.

The success of the meeting was due, in no small part to the tireless efforts of E. S. Prevost, or "Ned" as he is called by those who know him. He is bee specialist of South Carolina and knows that state like a book, and every beekeeper in it knows Ned.

The officers for the coming year are: President, M. S. Fortune, Mayhew, Miss.; Vice. Pres., C. E. Heard, College Station, Texas, and A. V. Dowling, Valdosta, Ga. The next meeting will be held in Vicksburg, Miss., the date to be announced later.

TOO LATE TO CLASSIFY

CLOVER COMB, also extracted in sixties. C. Holm, Genoa, Ills.

FOR SALE—100 colonies, guaranteed free from disease, also packages and queens. Alonzo McKay, Rt. 1, Vicksburg, Miss.

MILLER BROTHERS, Three Rivers, Texas. Only exclusive Caucasian breeders west of the Mississippi. Can ship queens in Italian packages safely. Guaranteed. Marketing prices. 2,700 pounds Italian bees contracted.

The above photograph shows one of Our Queen-rearing Yards

It gives a passing glimpse of the tremendous outlay a modern package bee shipper must make to furnish satisfactory service. If you have never visited a large and modern package bee shipping company, by all means come to us and let us show you what it takes to produce plenty of **First Grade Bees** for a very short shipping season.

Each new shipping season offers you improved service from Garon Bee Co.

Our New Departure from the old method of queen rearing and selection of breeding stock is a mixture of all the best ideas of the old methods with the latest scientific ideas. The new method has already produced most gratifying results for us.

We have good reasons to believe that the quality of our bees is surpassed by none and that our service, in promptness of delivery, is hard to equal.

We solicit truck orders upon advanced arrangements with buyers.

Prices:

2-lb. pkg. bees with young laying queen,	$2.45
3-lb. pkg. bees with young laying queen,	3.15
Queens, each	.75

To Dealers and Associations: 15% off of above prices.

Garon Bee Company, Donaldsonville, La., U. S. A.

"BETTER-BRED QUEENS" PACKAGES YOUNG BEES

Same Satisfactory Prices for 1939

$2.45 for 2-lb. pkgs. with Queens; Queens, 75c

$3.15 for 3-lb. pkgs. with Queens
Dealers' Discount 15%

Honest weight, three-banded Italians. Be wise and book your orders early for 1939. Orders booked without deposit.

CALVERT APIARIES, CALVERT, ALABAMA

XUM

Reliable Service, Reliable Package Bees and Queens

Three Band Italian Bees and Queens

Price List, Via Express Collect

2-lb. package bees with select untested queen .....$2.45 each
3-lb. package bees with select untested queen .....$3.15 each
Select Untested Queens ..75c each
Select Tested Queens ..$1.50 each

Prices of package bees via mail quoted on request.

15% discount on the above prices will be allowed dealers on bees for re-sale.

Support the American Honey Institute.

W. E. HARRELL
HAYNEVILLE, ALABAMA

MERRILL'S Queens

Booking orders for 1939 code prices

MERRILL BEE COMPANY
Bucatunna, Miss.

If you want the best in Mountain Gray Caucasian bees and queens for 1939 place your order early with

CAUCASIAN APIARIES,
Brooklyn, Ala.

Now Booking Orders

For early spring shipment of Bees and Queens. Market prices. Send us a postal card for complete information.

CITRONELLE BEE CO.
Citronelle, Ala.

WRITING ON THE WALL

(Continued from page 59)

controlled, still exists. Can we avoid the mistakes of that attempt to solve our problems? Should we tackle the same things they did, or in the same way? Is the need for a commercial beekeepers' league more acute now? Shall we try to answer these questions at the fall meeting of this association?

• • •

CHEMICAL AND PHYSICAL PROPERTIES OF HONEY

(Continued from page 21)

centrifuging. While no honey produced in this country exhibits this phenomenon to the same extent as heather, it has been found by J. Pryce-Jones of England that buckwheat honey and certain other types are thixotropic to some extent.

(To be continued)

For Sale --- PURE ITALIAN BEES

Queens, each .....$ .75
1 lb. Bees with Queen.....1.75
2 lbs. Bees with Queen.....2.45
3 lbs. Bees with Queens.....3.15

Let us book your order for 1939. We will please you.

GRAYDON BROS.
Route 2, Greenville, Ala.

A Good Rule to Go By

Buy your Italian bees and queens from

Alabama Apiaries

MT. PLEASANT, ALA.

Let us quote you prices. Book your order early.

DEALERS ATTENTION

We have a special proposition of interest to all dealers or to all beekeepers who wish to become dealers of Beekeepers' Supplies. Write for information. All goods are GUARANTEED SATISFACTORY.

Falcon Quality Products

W. T. Falconer Mfg. Company
Falconer, New York

RICHARD D. BARCLAY

(Continued from page 27)

nor accept any office, preferring to remain in the ranks," and, "he was said to have all the bee books there were."

At the San Antonio meeting Mr. Barclay was made chairman of a committee to work for uniformity of the bee disease control acts of the U. S.

For four years he was a member of the New Jersey Board of Agriculture and its Vice President during his last year on the board.

Perhaps this brief account of his beekeeping activities can no better be closed than by quoting a paragraph from Dr. Surface's letter which reads: "In the death of Mr. Barclay the science and art of apiculture has lost a most earnest supporter and devotee and many of us have lost a most able and worthy friend."—E. G. Carr, Pennington, N. J.

4000 Virgin Queens

Were safely introduced during the last season in our queen yard. All with Pritchard introducing cages. These are simple, inexpensive, and easily made. I made the ones that were used. You can make yours. For 25 cents (tax included) I will send one cage and a leaflet giving our method of introducing.

MELL PRITCHARD, Medina, O.

WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS.

Three-Banded Italian Queens

If you want Ideal Colonies get your package bees and queens from The Ideal Apiaries. We guarantee satisfaction.

We have the best train service in the South. Let us book your order now for spring delivery. 18 years experience in queen rearing.

Prices

Mated Italian queens.....$ .75
Three-pound pkg. with queen.... 3.15
Two-pound pkg. with queen.... 2.45

15% discount to dealers

The Ideal Apiaries
Durant, Miss.

PATENTS & TRADEMARKS
Williamson & Walton
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Washington, D. C.

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Among Your Beekeeping Friends

A number of persons have written us for our offer to reliable persons. However, we still have a few localities where the right person can secure a number of subscriptions. Write for sample copies. Give references.

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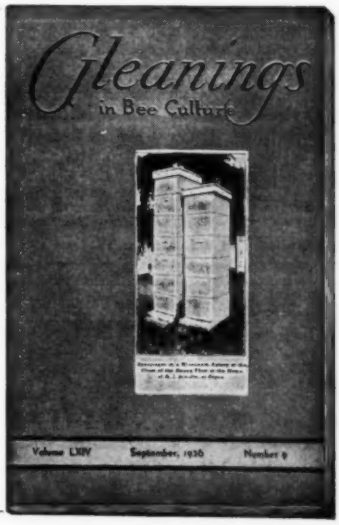

XUM

For 1939--York's Package Bees and Queens

Quality Bred Italians. Any quantity same price

Untested young laying queens, ...$ .75 each, any number
2-lb. pkgs. bees with queens, ... 2.45 each, any number
3-lb. pkgs. bees with queens, ... 3.15 each, any number
4-lb. pkgs. bees with queens, ... 3.85 each, any number
5-lb. pkgs. bees with queens, ... 4.55 each, any number

Queenless packages less price of queens.
15% Discount to recognized dealers only.

Experimental tests in our Northern Apiaries mean:
Better methods of shipping.
Quicker introduction of queens.
Supersedure reduced to a minimum.
Queens laying soon after installed.
Quicker build-up a saving of time and expense.
We are booking orders now for spring delivery.
Dependable service and satisfaction guaranteed.
Place your order now; do not delay, and be assured of your bees when wanted. Order direct from this advertisement and save time. All orders appreciated and acknowledged promptly. We are expecting a larger demand for early bees. Do not get left.

York Bee Company---The Universal Apiaries

Jesup, Georgia, U. S. A.
(The Home of Quality Products)

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